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# Psychological Bulletin

## PROCEEDINGS OF THE THIRTY-FIFTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

NORMAN L. MUNN, SECRETARY, VANDERBILT UNIVERSITY

The Thirty-fifth Annual Meeting of the Southern Society for Philosophy and Psychology was held in New Orleans, Louisiana, on March 22 and 23, 1940. Tulane University was host institution. All meetings were held in the St. Charles Hotel.

The Council of the Society met in executive session on Thursday at 8:00 p.m., with President Marjorie S. Harris presiding. Other Council members present were Emily S. Dexter, Christian P. Heinlein, Frank A. Geldard, Norman L. Munn, John Paul Nafe, and Herbert C. Sanborn.

Simultaneous sessions in philosophy and psychology were held on Friday morning and afternoon. A further psychology session was held Saturday afternoon. Twelve philosophy and 18 psychology papers were presented during these sessions. Chairmen for the philosophy sessions were Peter A. Carmichael and Frederick W. Maier. Psychology sessions were under the chairmanship of Christian Paul Heinlein, Frank Geldard, and John M. Fletcher.

A round table on "Psychological Research in Civil Aeronautics" was held Friday at 4:00 p.m., with John G. Jenkins as chairman. Contributors to the round table were Harry M. Johnson, Frank A. Geldard, Harold A. Edgerton, Morris S. Viteles, and Clifford P. Seitz.

The annual banquet of the Society was held Friday at 7:00 p.m. in the Hunt Room of the St. Charles Hotel. Following the banquet Dean Marten ten Hoor gave an address of welcome in behalf of Tulane University. Dr. Frank Geldard then introduced President Marjorie S. Harris, who delivered her address, entitled "Mathematical Logic and Aesthetics." Refreshments were provided by Tulane University at the conclusion of the address.

A symposium on "The Philosophy of Science" was presented Saturday at 9:00 A.M. Dr. Harold N. Lee served as chairman. The speakers were Knight Dunlap, Albert G. Balz, and Harry M. Johnson.

The annual business meeting of the Society was held Saturday at 11:30 A.M., with President Harris presiding.

#### MINUTES OF THE ANNUAL BUSINESS MEETING

The minutes of the Thirty-fourth Annual Business Meeting of the Society as published in the *Psychological Bulletin*, 1939, Vol. 36, No. 8, were approved as read.

The annual report of the Secretary was approved as read. The Secretary, in addition to relating tasks performed during the year, reported that four members had been added to the Society by reason of affiliation with the American Psychological Association. These members are: Francis C. Sumner, Howard University; Eli S. Marks, Fisk University; Lily Brunschwig, Fisk University; and Ross Harrison, Yale Laboratories of Primate Biology, Orange Park, Florida. There was a loss of 17 members during the year. Seven of these resigned and 10 were dropped for nonpayment of dues.

The report of the Treasurer was approved as read. Assets and receipts totaled \$1,336.12, expenses \$440.05, leaving a cash balance of \$896.07. This represents a net loss of \$21.81. However, a contribution of \$50 to assist the committee of the American Psychological Association concerned with employment of displaced foreign psychologists, and preparation of the new type of *Yearbook*, constituted unusual expenses for the year.

Dr. Albert A. Balz, Chairman of the Standing Committee on Philosophy, gave a brief informal report in which he indicated that the work of his committee has been suspended pending the outcome of a study by the American Philosophical Association.

There was no report from the Standing Committee on Psychology.

Under the heading of unfinished business an amendment to the Constitution, as approved and tabled in accordance with Article V at the Thirty-fourth Annual Business Meeting, was presented for final consideration. This amendment to Article II, Section 2, reads as follows:

"Candidates for membership shall be proposed by two members of the Society and recommended by the Council before their names are voted upon by the Society."

The Society passed this amendment and it became law.

On recommendation of the Council, the following 18 new members were admitted to the Society: Delton C. Beier, Louisiana State University; John K. Benton, Vanderbilt University; Pearl E. Bretnall, Sophie Newcomb College; John M. Campbell, Emory University; Harry M. Capps, Louisiana State University; Robert F. Creegan, College of William and Mary; Ellis Freeman, University of Tampa; Francis S. Haserot, College of William and Mary; Nicholas Hobbs, Ohio State University;

Joseph S. Jacob, University of Georgia; Vidkunn C. Jarl, Tulane University; Martin D. Kaplon, University of Mississippi; John H. Melzer, The Citadel, Charleston, S. C.; James A. Pait, University of Virginia; Edward T. Ramsdell, Vanderbilt University; Donald Sisson, Louisiana State University; Paul C. Young, Louisiana State University; and Frederick P. Weber, University of Virginia.

On recommendation of the Council, John Paul Nafe, Washington University, was elected President of the Society. B. von Haller Gilmer, Carnegie Institute of Technology, and William P. Warren, Furman University, were elected to the Council for the period 1940-1943.

The Council recommendation to accept the invitation of the University of Maryland as host institution for the 1941 meeting was approved by the Society. It was announced that the meeting would be held in a Washington hotel.

Dean ten Hoor moved, and Frank Geldard seconded, a motion requesting the Council to reconsider the custom of holding meetings only in hotels. It was pointed out that rigid adherence to such a custom would prevent the Society from meeting at certain institutions not in the neighborhood of a suitable hotel. The motion was passed.

The Council recommended that a communication from Dr. A. G. Bayroff be written into the minutes of the meeting and printed in the Proceedings. The recommendation was moved and passed. Dr. Bayroff's communication follows:

"The following statement appeared in a circular letter dated January 13, 1940, sent out from my office, regarding the question of a society for psychologists: '... no opportunity was offered for the presentation of new business from the floor.' The wording of this statement was not intended to imply a charge against the Chairman, Dr. Geldard, of wilfully denying the floor to individual members who wished to introduce new business. I had in mind other factors which, I believe, were responsible."

Under the heading of new business the Council proposed a resolution concerning the move on the part of certain members and nonmembers of the Society to form a regional branch or affiliate of the American Psychological Association. The resolution, which was passed by the Society, reads as follows:

"The Council is informed that on January 13, 1940, certain persons who desired to organize a regional branch or affiliate of the American Psychological Association within the territory east of the Mississippi river and south of the northern boundaries of Kentucky and Maryland, but excluding West Virginia, sent to some 297 psychologists residing within this region a questionnaire concerning this proposal, with the request that it be answered immediately; and that on March 12, 1940, Dr. A. G. Bayroff and Dr. W. P. Chase, in behalf of the interrogators, published the results of the census to that date.

"The results disclosed that 85 individuals, constituting 28.6% of those who were interrogated, favored the proposal; that, of the 85 persons who replied favorably, 37 persons were members of the Southern Society for Philosophy and Psychology; that these 37 persons constitute 43.5% of the total number who replied favorably, or 23.8% of the 155 psychologist members residing within the specified region, or 18.5% of the 200 psychologist members of the Society, or 13.8% of all the 268 members.

"Dr. Bayroff and Dr. Chase, in publishing the results, announced that the informal committee who had issued the questionnaire considered its work to have been completed and therefore disbanded itself, leaving the results available to any bona fide group which might wish to proceed to effect the proposed organization.

"In consideration of these facts, the Council proposes the following resolution:

"**RESOLVED**, that although the Southern Society for Philosophy and Psychology has always encouraged free discussion of every important psychological issue and problem, and has constantly striven to provide sufficient means for such discussion, and although we believe that it has succeeded in doing so,

"**AND ALTHOUGH** this Society needs and desires the coöperation and good will of every competent psychologist in the South,

"**AND ALTHOUGH** we believe that the Society should continue to work for the advancement of Philosophy and Psychology jointly as well as severally,

"**NEVERTHELESS**, the Society does not seek to monopolize any good work, or to impede the efforts of those who seek to advance the science of Psychology, but who prefer other means than we have employed.

"**WE THEREFORE** take this occasion to declare that we do not object to the formation of another regional association of psychologists in southern territory; and we also hope, that if another organization should be effected, it will endeavor to supplement the work of our Society, and that by adopting suitable standards of admission, and by choosing suitable times and places for its meetings, it will encourage overlapping membership and common effort with this Society and discourage interorganizational rivalry.

"**IN GENERAL TERMS**, we declare that the Southern Society for Philosophy and Psychology will continue to coöperate, as best it may, with every organization which intelligently aims to improve the status of scientific psychology, and to interfere with none of them."

Dr. Peter A. Carmichael offered from the floor a resolution concerning the appointment of Bertrand Russell to the College of the City of New York. After debate, the resolution was committed to the Council for its consideration.

Professor Knight Dunlap, Chairman of the Committee on Resolutions, moved the following resolution:

"**BE IT RESOLVED**: (1) that the Southern Society for Philosophy and Psychology thanks Tulane University and the Committee on Arrangements for the Thirty-fifth Annual Meeting, for the hospitality, solicitude, and labor which have made the meeting notable and memorable; and (2) that the Southern Society for Philosophy and Psychology hereby expresses to the New Orleans Association of Commerce and to the Staff of the Hotel St. Charles its appreciation of the coöperation which has contributed much to the success of the Thirty-fifth Annual Meeting of the Society."

The motion was responded to with a rising vote of approval, and the meeting adjourned.

## PROGRAM

## PHILOSOPHY

Friday Morning Session, March 22

PETER A. CARMICHAEL, Chairman

*Hegel's Logic of Process.* PALMER WEBER, University of Virginia.

Hegel believes that he has explained the nature of process in his Greater Logic. In this work we find the steady movement of the categories toward their end in the Absolute. Each category is a partial definition of the Absolute; in some sense, each contains the Absolute. What is common to each category and yet somehow not limited to any specific category—this, if expressed, constitutes a formal *Pattern* which seems to govern categorial movement. Such a pattern would be purely formal—the formal essence of all movements. The constant adjectival properties of every Hegelian thesis, antithesis, and synthesis reflect such a Pattern. Within the Greater Logic there is a Giant Triad—do all the categories under the Giant Thesis have the formal adjectival properties of a thesis; similarly, do the categories under the Giant Antithesis and Giant Synthesis reflect in their character the formal properties of *every* antithesis and synthesis? The paper will try to demonstrate this as true. Finally, the logic that is implied by the formal properties of the Pattern is explored.

*Dr. Broad's Refutation of McTaggart's Arguments for the Unreality of Time.* ROBERT LEET PATTERSON, Winter Park, Florida.

Since the relations of earlier and later which hold directly between the terms of the time-series are unchanging, McTaggart argues that the incompatible characteristics of pastness, presentness, and futurity can be possessed by these terms only in relation to something outside the series—either another time-series or a timeless entity—and that each hypothesis involves us in an infinite regress which is vicious. Dr. Broad objects that no term appears to possess these incompatible characteristics simultaneously. This, however, is to beg the question, for what is at issue is not the temporal character of appearance but that of reality.

On Broad's own view, time is composed of a compact series of indivisible event-particles which, in certain circumstances, can actually be "prehended." Past and future have no being, and reality is identical with "absolute becoming." To this theory four obvious objections can be raised: (1) the addition of unextended event-particles to one another cannot yield temporal extension; if duration be real, the event-particle must possess it, and so be divisible; (2) the reduction of reality to the instantaneous present threatens us with complete nihilism; (3) Broad's "wedge-theory" of perception involves that what is "prehended" as

present is always the period just past; but, if the past be unreal, this is impossible; (4) since the past and the future have no being, no judgments can be made about them. Hence, the theory seems at least as open to question as that against which it is directed.

*Metaphysics as Structural Integrity.* FREDERICK W. MEIER, Louisiana State University.

The problem at issue is the nature and function of metaphysics. Metaphysics is demonstrated to be neither a branch of, nor an appendage to, philosophy, nor a peculiar set of "problems" surviving solution. Metaphysics is a formative constituent which appears in the texture of the philosophic system itself and makes "problems" such as they are by way of inquiry and method as a whole in the context of philosophy. System can be achieved or determined only by way of philosophic method, since a metaphysical standpoint implicitly precludes complete autonomy to any branch or division of philosophy; and the boundaries, functions, and relations of these branches depend on the method. This paper advances the thesis that metaphysics is essentially a phase of philosophic method concerning the relations of component processes and segments, ordination, and the structural arrangement of the entire constituency. Synthesis, integration, and unification are familiar terms in use describing the complete or ultimate operation of philosophic method. The significance of these terms with reference to the structural integrity of the system is, however, subject to critical determination. Metaphysics as such can vouch for no more than structural integrity.

*Unity of Genus, Species, and Individual in the "De Ente" of Aquinas.* KENNETH K. BERRY, University of Tampa.

The question is raised: As they are treated in the *De Ente et Essentia* of Thomas Aquinas, in what sense may we legitimately say that "one" can be predicated of the genus, the species, and the individual?

If we grant the unity of species as a starting point, the equal unity of genus and individual would seem thereby to be jeopardized.

The potentiality-actuality distinction is employed to interpret the term "implicitly" in the statement that the unity of the genus consists in the commonness of its signified form, containing implicitly whatever is in the species.

An inversion of the meaning or direction of the potentiality-actuality distinction is forced upon us to preserve likewise the unity of the individual. This inversion is necessitated by the shift from second to first intention and the consequent distinction within the meaning of matter.

But the inclusion in being of both "logical intentions" and existents saves the legitimacy of the prediction of unity in all three cases.

*Philosophy Proper and the Philosophy of Science.* GEORGE TODD KALIF, Tulane University.

The articulation of assumptions is the primary characteristic of philosophy. Logical positivists would agree with this, since their interest

centers upon critical evaluation of the sentences of science. The philosophy of science, however, represents one aspect of reality, and departmentalization does not correspond to any cleavages in the phenomenal or real world. This is recognized by Professor Carnap (and scientific philosophers generally), especially in his thesis of physicalism, which is an initial concept not dictated by empirical observation nor accepted by virtue of verification. Hence, since logical positivists must use the *a priori*, basic questions are not whether we should or should not have initial concepts, but what these concepts are, what they are used for, and what the range of their applicability is in observational experience. Initial concepts border upon, and fade into, those of philosophy proper; hence, there is no ground for restricting the domain of philosophy to the confines of favored subject matter. Philosophy proper (the genus) deals with concepts basic to all experience; the philosophy of science (the species) reflects critically upon the presuppositions of science, and the relation between the two is achieved through initial concepts and through the passage of ideas across artificial boundaries.

*Definition and Defining in Plato.* WILLIAM S. WEEDON, University of Virginia.

The Platonic theory of definition may reasonably be supposed to differ from the "classical" theory, since Plato does not, in general, appear to subscribe to the notion that a definition is something completed and in itself ultimate. The fluidity which characterizes discourse is somehow retained in the definition itself, and, in considering the process of defining, we are actually examining something which is integral to the theory of definition. We thus enquire into the nature of the "phrase signifying," taking Aristotle's famous definition of definition as standard. Platonically speaking, we have thus a "phrase representing," and the theory of definition becomes a part of the general theory of *μίμησις* (mimesis). However, the problem is restricted in this paper to the discrimination of a fundamental pattern which may be regarded as lying back of the defining process as illustrated in the dialogues. This pattern, which can be formulated abstractly by the use of certain techniques familiar from topology and the general theory of limits, is called "The Pattern of Demonstrative Abstraction."

## PSYCHOLOGY

CHRISTIAN PAUL HEINLEIN, Chairman

*The Effects of Prefrontal Lobotomy on Depressed Patients.* PHILIP WORCHEL, Florida State Hospital, and J. G. LYERLY, Jacksonville, Florida.

The operative procedure of prefrontal lobotomy was done on a group of 13 patients with severe depression, agitation, and apprehension to see if relief could not be obtained from their suffering and, at the same time, to see if the operative procedure would affect the mental abilities of these

psychotic individuals. The effects of this operation were thus studied from two aspects, the therapeutic and the psychological.

Social histories were obtained and the Stanford-Binet Intelligence Examination was administered prior to the operation. On some of these cases it was not possible to obtain valid test results because of the mental condition. After the operation detailed progress notes were made, and the patients were retested with the Stanford-Binet. If the patient was furloughed home, correspondence with the guardian kept us informed of the patient's progress.

On 11 of these patients the operation was performed on both prefrontal lobes; and on the other 2 patients, the operation was done on one lobe only—the left lobe on one patient, and the right lobe on the other.

From the results thus far obtained it is indicated that after the operation there is a definite increased psychomotor activity, together with a corresponding emotional uplifting. Any hallucinatory trends present prior to the operation were still present after the prefrontal lobotomy. Apparently there were no consistent changes in the intellectual capacities as measured by the Stanford-Binet except for the free-association test on year 10. Only one patient of those tested was able to pass this test satisfactorily after the operation. Due to the lack of a control group it is not contended that the results are due to the operation. The therapeutic efficacy of such procedure awaits objective evaluation of social adjustment.

*The Application of the Rorschach Test and a Word-Association Test to Patients Undergoing Prefrontal Lobotomy.* THELMA HUNT, George Washington University.

The Rorschach Test and the Kent-Rosanoff Word-Association Test have been applied before operation and after operation to 30 psychiatric patients undergoing the operation of bilateral prefrontal lobotomy for relief of symptoms of anxiety-depression and emotional tension. The operation consisted of subcortical amputation of the frontal poles just anterior to the ventricles. This report stresses (1) changes in test performances postoperatively as compared with preoperatively; (2) indications as to functions of the prefrontal area of the frontal lobe as revealed by the test results; and (3) usefulness of the Rorschach and Word-Association techniques in psychiatric testing. Consideration is also given to relationship of the test changes to psychotic condition, to change in psychotic condition, and to immediate operative effect.

*Homeostasis as an Explanatory Principle in Psychology.* JOHN M. FLETCHER, Tulane University.

Cannon defines *homeostasis* as "a tendency to uniformity or stability in the normal body states of the organism." The instances of the manifestation of this tendency recorded in his physiological studies are familiar. The claim is here made that in so far as the current concept of body-mind as an organic whole is a valid one, this tendency *should* be observable in the mental, as well as in the physiological, aspects of the life of this organism. The further claim is made that such a tendency *is in fact to*

be observed in perceptual experiences, in emotional reactions, and especially in the defense mechanisms, so-called, of the developed personality. Many types of reaction, customarily described in more or less isolation, become more intelligible when subsumed under this explanatory principle.

The substantiation of this principle as valid in the field of psychology does not depend upon reasoning by mere analogy, but, rather, upon the demonstration, through observation, of a tendency to uniformity or stability in the normal *mental* states of the organism. Selected instances of this tendency are suggested in this paper.

*Antidotes for Superstitions Concerning Human Heredity.* KNIGHT DUN-LAP, University of California at Los Angeles.

Young persons confused by popular beliefs concerning the inheritance of feeble-mindedness, so-called "mental diseases," sensory defects, and physical traits, in conjunction with their personal and premarital problems, are often thrown into a state of emotional perturbation, leading in some cases to attempts at suicide or serious neuroses. In the early stages of such disordered conditions, the psychologist may save the patient rather simply by explaining to him that the popular theories, although they may be presented to him in textbooks and/or lectures, are mere superstition. The psychologist has the further duty to protect the public against the propaganda of pseudogenetics by diffusing information as to its lack of scientific basis, and thus to help prevent the disastrous effects.

*The 1937 Stanford-Binet Scale as a Technique in the Diagnosis of Schizophrenia.* MARION MCKENZIE FONT, Tulane University.

Findings are presented from Revised Stanford-Binet test results of patients seen during the past two years at the Tulane Psychiatric Clinic.

A list of 13 Revised Stanford-Binet response patterns and 13 response qualities characteristic of schizophrenic patients has been compiled. The number of these response patterns and response qualities found in the test results of patients diagnosed as early schizophrenics or as patients showing some tendencies of early schizophrenia seems significantly greater than the number of such response patterns and response qualities found in other patients seen at the clinic.

Certain response patterns and response qualities seem particularly significant in the discrimination of the schizophrenic group.

Care has been taken to exclude from this study the test results of patients diagnosed as epileptics, mental defectives, and sufferers from organic disease.

*The Prediction of the Outcome-on-Furlough of Dementia Praecox Patients.* JOE S. JACOB, University of Georgia.

The major problem of the study was to construct a scale, based on items contained in hospital case-history records, for predicting the readmission or nonreadmission of dementia praecox patients furloughed or discharged from the State Hospital at Milledgeville, Georgia. The

methods used in constructing the scales were modifications of the techniques developed by E. W. Burgess, the Gluecks, Hornell Hart, C. B. Vold, and others for predicting the parolability of prisoners.

A weighted and an unweighted scale were constructed on a working sample of 318 patients furloughed at least five years before the time of the study. These patients were divided into four outcome-on-furlough categories, which furnished the criterion for selecting and weighting the scale items. The validation sample of 108 cases yielded C's of .502 and .520 between the four outcome-on-furlough categories and the scores based on the weighted and the unweighted scales, respectively. The working sample yielded C's of .545 and .521, and the combined samples yielded C's of .474 and .459 between the four categories and the scores on the two scales. Marked discrimination was obtained between the "least successful" and the "most successful" outcome-on-furlough categories. It was concluded that the instruments have significant predictive value.

*Context for Immaturity of Purpose and Other Social Maladjustments.*

LAURENCE WHISLER, Research Office, University of Louisville.

Application of the Washburne Social Adjustment Inventory to 161 entrants and to a group of sophomores has shown that (1) faculty "maladjustment" ratings are unrelated to scores; (2) freshmen and sophomore percentages are similar; and (3) six times the expected number of entrants are maladjusted on purpose and impulse-judgment. Distributions of happiness, sympathy, and security in social situation scores are in line with expectations.

Immaturity of purpose is unrelated to high school grades and to entrance test scores. Maladjusted scores on purpose are associated with one's family having a large house, having a new car, owning property, being better off now than formerly, taking summer vacations, having maid-service, having large income, and having only one or two children.

Analysis is being made of the relation of maladjustments in impulse-judgment—that is, in lack of foresight in action—to personnel data and test scores.

## PHILOSOPHY

Friday Afternoon Session, March 22

FREDERICK W. MEIER, Chairman

*Leibniz's Search for Adequate Psychological Categories.* LEROY E. LOEMKER, Emory University.

From the earliest years of his thought, Leibniz planned a work on the mind to do justice to all observed facts of mental life, to explain the normative aspects of experience, particularly in morality, law, and logic, and to establish the contact of mind with its environment in knowledge. In the formative years before the "petite discours" of 1686, his search leads him successively through four approaches, all of which contribute to the terminology of his mature thought. These are the Aristotelian analysis into form and matter, the Platonized Aristotelian notion of a harmony of

ideas polarized into activity and passivity, a spiritualized version of Hobbes's *conatus* theory, and the new mathematical concept of functional dependence.

The basic categories of Leibniz's thought which develop from these influences by 1686 receive clearer application in his psychology than in the other fields of his interest. They are: (1) the *ideas* as primitive force or possibilities of action; (2) the *point of view*, a differentiation of the ideas into "laws of individual series"; (3) *conatus*, the momentary impulse of an idea toward action; and (4) *resistance*, due to the conflict of *conatus*. These categories, together with the unrelated concept of *reflexion*, supply a structural analysis of the spirit monad, explain sensory content, provide a basis for a realistic theory of perception, the subconscious, and will, and make possible important reforms in logic, ethics, and law.

*Is a Science of Value Qua Value Possible?* LEONARD J. ESLICK, Drake University.

The possibility of metaphysics as a science of being *qua* being has long been debated. The recent rise of value theory as an autonomous subject matter brings with it an analogous question. Can there be a science of value *qua* value? Is there such a thing as *normative* science?

Two general conditions for the existence of any science whatever are laid down: (1) The objects of a science must be at least partly intelligible in themselves. We must assume that the world, or that part of it under investigation, is truly *open* to rational inquiry. (2) The intelligible being of those objects must be adequately reflected by, and known through, the concepts of that science. These two conditions are found to exclude the so-called "positive science" of the positivists and the Kantian theory of science.

The value theories of Perry, Laird, Moore, Russell, and Urban are considered as claims to be sciences, in the light of these two conditions. The background of these theories is the development from Descartes and the British empiricists to Kant. Two general negative conclusions are maintained: (1) As long as modern value theorists retain the epistemology and metaphysics of the Cartesian-Kantian cycle, there can be no genuine progress beyond either a sterile positivism stemming from Hume or the conclusions and paradoxes of Kant's third critique. (2) As a consequence, a true science of values *qua* values cannot be achieved. We shall have either the unfruitful descriptive enterprise of Perry and Laird, or, by an act of black magic which will produce a genuine transcendental illusion, the Kantian normative science of values of Urban.

As a positive conclusion, it is suggested that only the Aristotelian tradition can produce a genuine science of values *qua* values which will meet the two conditions stated above.

*Selfishness and Unselfishness.* GEORGE A. MORGAN, JR., Duke University.

By combining the views of Butler and common sense we may distinguish three major forms of selfishness: objective, naïve, and reflective.

Absolute selfishness, a maximum of all three together, is self-contradictory; pure selfishness is the moral equivalent of solipsism; dominantly reflective selfishness is at once harmless, arbitrary, and a rare excellence. Unselfishness has corresponding forms, for which similar conclusions may be drawn on similar and additional grounds. Neither absolute nor pure altruism can be the world's panacea. In particular, wise unselfishness requires the use of selfish impulses, just as wise selfishness does the converse. Ethical altruism, commonly mistaken for Christianity, is really a product of religious decadence. The very notions of selfishness and unselfishness are a caricature of human life and deserve ethical oblivion.

*The Unique Aesthetic Fact.* PETER A. CARMICHAEL, Louisiana State University.

Aesthetic properties are said to be associated with all objects of experience, more or less, and to converge in objects of artistic creation. What is it, if anything, that distinguishes aesthetically a product of art from everything else? Answers to this question have been proposed by philosophers from Plato to Croce, and in a striking frequency of instances they agree that the distinctive aesthetic quality is subjective, not objective, and that it is an expression of some kind. If we acknowledge that the understanding of objective fact is most successfully accomplished by science, there occurs a question as to the province of art: Is it to represent or to express? The answer proposed is, to express. The *pulchritudo vaga* of Kant is suggested as the type of purely aesthetic experience, unique and exclusive. Several corollaries are drawn from the general theory of expression, including: The aesthetic object is not a public object and can reach the public in vicarious guise only; criticism is not of art but of objects associated with art; the art for art's sake thesis is sound.

*Imitation and Expression in Art.* IREDELL JENKINS, Tulane University.

Approximately 50 years ago the study of aesthetics took an entirely new direction, or so the aestheticians of the time proudly proclaimed. The new theory ushered itself in with the triumphant announcement that the true meaning of art had at last been discovered and that now the processes of artistic creation and appreciation could be fully explained. The key to unlock this hitherto sealed door was the doctrine of art as expression; closely associated with it were the concepts of creative imagination, form, and disinterested pleasure. Working together, these were to revolutionize aesthetics.

But somehow all the bright promises have not been fulfilled: the new school has not given to philosophers a coherent theoretical account of the facts of the aesthetic life; and it has not given to artists the practical advantage of a stable tradition. Since the effects of the change from the old order to the new have been so meager, one inevitably wonders if the new theory is so different in essence. This paper suggests that the answer is in the negative: that the differences between "expression" and "imitation," "creative imagination" and "inspiration," "form"

and "ideal," "disinterested pleasure" and "intuition" are more verbal than anything else.

*The Consequences of Pragmatism.* WILLIAM P. WARREN, Furman University.

Dewey's philosophy bespeaks the breadth of possibilities in pragmatism or instrumentalism, combining the notions of the instrumentality of ideas for knowledge and of knowledge for consummatory values. Is Dewey's view itself instrumental in coping with criticisms that are being passed upon it? Cohen's criticisms range from citing one-sided emphases, hasty negations, and half truths to inversions of the categories of human and nonhuman nature and of the basics of inquiry. Theoretically, Dewey's methodology is vague. Practically, his philosophy, while claiming to envision human values broadly, berates intellectual satisfactions and lends itself to deadly worldliness. Dewey's reply asserts his frame of reference as the point of view in terms of which to judge the relevance of criticisms. He makes a case for antecedents and ends as terminal phases of a complex continuum, insists that physical theory is essential to practical living, and proves by Cohen that philosophy contains a moral ingredient. He admits overemphasis and fails to confute the implications that his functionalism is not grounded in an adequate system of knowledge and that he conceives philosophy too narrowly. Instrumentalism *per se* seems unequal to the attacks of these basic criticisms.

## PSYCHOLOGY

FRANK GELDARD, Chairman

*A Theory of Psychological Components of Individual Differences in Performance.* ROBERT C. TRYON, University of California.

In contrast to theories of mathematical "factors" whose properties are nonpsychological, a general theory of psychological components is presented—one purporting to account for individual differences in animal and human performances, and here illustrated on rats' maze performance. The theory consists of a statement of (1) the properties of components: content, form, emergence process and its conditions, and generality of content, form, and process-competence; (2) the characteristics of coalitions of components determining performance: complexity, concomitant relation, interaction, and individual coalitions; and (3) the nature of learning, conceived of as the change of coalition with practice, to be described in terms of change of contents, of change of emergence processes, of modes of selection by the subject, and of those components whose final selection by the subject accounts for "correct" performance. The selective mode postulated for this maze ability requires six assumptions: retention (memory) of components, of their consequences, of the effort they entail; existence of multiple goals; added weight through emotional support of those components having goal consequences; and selection of those involving least effort.

*Intelligence Diagnostics of Certain Animal Learning Problems Adapted to Human Subjects.* AUBREY W. BICKLEY, King College.

In this investigation the performances of 100 college students on adaptations of the Yerkes multiple choice apparatus, the Maier reasoning test, the Hunter double alternation temporal maze, and the Tolman-Honzik multiple-T maze were studied and compared with the performances of the subjects on three standard intelligence tests. The following conclusions are of interest:

- (1) There is probably some positive relationship between performance on the learning problems and on the intelligence tests, but scores on the problems seem to have little value in predicting individual scores on the tests.
- (2) Scores on the problems seem to be about as closely related to scores on the tests as achievement on many of the commonly used performance tests is related to achievement on verbal intelligence tests.
- (3) The reasoning test problem appears to rank first, and the multiple-T maze last, in relationship to the tests. It also seems that the multiple choice problem ranked somewhat better than the double alternation maze in similar comparisons.
- (4) The data seem to indicate that approximately 50 to 75% of the subjects generalized to some extent, and generalizations appear to be more frequent among subjects making high test scores than among those making low scores.

*An Experimental Study of Retention and "Generalization" in the New World Monkey.* WILLIAM GALT and C. J. WARDEN, Columbia University.

New World monkeys (*Cebus Capucina*) were trained to respond to a series of black and white squares so that they consistently chose the black square when the stimuli were small (5 cm. square) and the white square when the stimuli were large (9 cm. square). After an interval of one year the animals relearned this problem. Retention for this complex discrimination problem is measured by the amount of saving on relearning. Stimuli of the same area but of varying shapes, such as rectangles, circles, crosses, and triangles, were now introduced in critical trials to ascertain whether the animals had "generalized" their learning. As part of a larger extirpation experiment (to be reported later), the animals were also tested on this problem after both unilateral and bilateral extirpation of the prefrontal brain areas. Some data are presented in regard to "absolute" and "relative" response to stimuli. There is a short discussion of the significance of the results obtained.

*Intensity Discrimination in the Peripheral Retina.* S. R. WALLACE, JR., Tulane University.

Proponents of theories of vision in which the differential intensity threshold is assumed to be a function of the number of stimulated retinal

elements have depended upon data obtained from studies of foveal sensitivity. Since the visual receptors vary with respect to number and type from fovea to periphery, the theoretical significance of peripheral differential sensitivity would appear to be great.

This paper is a report of the measurement of differential intensity thresholds at various distances from the fovea. It is found that differential sensitivity, in opposition to absolute sensitivity, declines rapidly as the distance from the fovea is increased.

The data are related to reports of histological counts of the retinal elements. Other factors which may be invoked to account for the loss in differential sensitivity are considered, and implications for peripheral, interactional, and central theories of visual sensitivity are discussed.

*Skin Temperature and Vibratory Sensitivity.* JOSEPH WEITZ, University of Virginia.

Using, as a vibratory stimulus, a needle vibrating at 256 cycles per second, intensity thresholds were determined on the arm. Warming the arm with an electrical radiant heat source, thresholds were again taken on the same "spots" previously stimulated. The temperature of the area in question was obtained with a thermocouple. The same procedure was employed, but "radian" cooling using dry ice was substituted for the warming. The results on all subjects showed a marked decrease in vibratory thresholds with warmth and a subsequent rise with increasing temperature. With decreasing temperature, vibratory thresholds rose markedly. An attempt is made to explain the results on the basis of a chemical theory of end-organ functioning.

#### SYMPOSIUM ON THE PHILOSOPHY OF SCIENCE

Saturday Morning Session, March 23

*The Postulate of Common Content.* KNIGHT DUNLAP, University of California at Los Angeles.

The question whether two persons may sense identical content can be answered only by reference to the frame of postulates of psychology. For unambiguous consideration of these, the categories of reality assumed in the discussion of the "Mind-Body Problem" must be identified and distinguished, and terms employed with explicit reference to these categories in order that the customary logical fallacies may be avoided. Seven categories, all of which have been recognized in the past, but which have not always been kept distinct, are presented. Consideration of the postulates with reference to these categories reveals the postulate of common content as an unavoidable part of the frame. The problem of causation, as it appears in the conventional controversies over parallelism and interactionism, turns out to be a group of problems concerning causation within the different categories and intercategorical causation; and the question is

raised whether the term "cause" as applied in one category has the same meaning as when applied to other categories or intercategorically.

*Concerning the Subject Matter of Psychology.* ALBERT G. A. BALZ,  
University of Virginia.

Ideally considered, Nature or Existence as a whole is, for scientific inquiry as such, a single subject matter. The distinction of the subject matter of a particular science from the subject matters of every other science is relative, contextual, and functional—not absolute. The distinction expresses the cumulative and revisional history of a science, together with the restrictions of inquiry prompted by existence itself. Efforts to demarcate the subject matter of psychology depends upon exploiting two resources: the fund of ideas that represents the net outcome of the history of psychology, and persistent traits of existential factors that suggest relevance to a particular type of inquiry. The subject matter of psychology, it is argued, falls within, and yet is distinguished from, the subject matter of biological science. Two clues to the distinction are suggested: first, the intrinsically anthropocentric character of at least a part of psychology's subject matter, and, second, those aspects of human activity which distinguish human activity from that of other living things. The former points toward the privacy of consciousness, the latter toward the making and employment of symbols.

*Some Studies of Experimentally Induced Impairment, Showing How the Results of Any Experiment Depend on the Investigator's Pre-experimental Assumptions and His Use of the Deductive Method.*  
H. M. JOHNSON, Tulane University.

Every genuine experiment is planned according to some hypothesis which agrees with all that the experimenter knows, but which he nevertheless doubts. Hence, he examines it for its logical consequences in order to determine what conditions, if they exist, would contradict the hypothesis; he then asks whether such conditions exist. According as his logical analysis is thorough and accurate, or not, depends his selection of possible facts to look for and, in part, what he will find. But the study may be ruined in its pre-experimental stage if the plan includes any false presuppositions, for, unlike hypotheses, presuppositions go undoubted and often undetected. In many studies of mental impairment in relation to prolonged exertion, loss of sleep, alcohol, narcotics, partial asphyxiation, etc., the experimenters presupposed that, if any impairment resulted, it would manifest itself in a decrement of performance in the prescribed task and be graded according to some characteristic of the agent. But this presupposes noncompensation, which characteristically occurs; and some authors concluded, falsely, that no impairment occurred. These disasters invite consideration from those modernists who disparage the usefulness of deductive reasoning.

## PSYCHOLOGY

Saturday Afternoon Session, March 23

*A Comparison of White and Negro Children on a Simple Eye-Hand Coördination Test.* JOSEPH E. MOORE, George Peabody College for Teachers.

This investigation employs a simple eye-hand coördination test to determine if any difference which might be attributed to race can be revealed. The test requires that each subject, using only one hand, pick up 32 marbles, one at a time, and place each in a separate hole. The total time on three consecutive trials is used as the measure of the subject's speed. This test calls for a type of coördination which, at this early age, seems relatively free from specific environmental training. The reliability of the measuring instrument employing the test-retest method on 187 subjects was  $95 \pm .006$ .

The white subjects were 43 boys and 49 girls; the negro subjects consisted of 39 boys and 32 girls. These children were in the first and second grades, and all were between the age of six and seven years, five months. A serious attempt was made to get comparable schools for both groups of subjects. All subjects were tested by the writer.

The results indicate that the white subjects in this study surpassed the negro children of the same chronological age. The differences between the groups are not statistically significant. Implication and suggestions for future research are pointed out.

*Preliminary Investigation to Determine the Conformity of Children to Aesthetic Principles in Graphic Art.* FLORENCE JENNINGS, Mississippi State College for Women.

As a preliminary investigation to determine the extent to which young children conform to aesthetic principles in graphic art, a study was made of the development of preferences for single geometric forms from series of similar forms differing in degrees of symmetry, complexity, and equilibrium.

The preferences of 30 adults having been experimentally determined, two series of five forms each were presented for preference to 231 children ranging in age from 22 to 118 months. Forms were drawn on cards and were also presented in three-dimensional form, as blocks. A supplementary "reward" series, in which children were permitted to keep selections, was given to 71 subjects. Forms in this series were identical in outline with, but different in color from, those used in the experimental trials.

Results indicate definite preference for a certain form in each series. By about seven years of age childrens' preferences are in accordance with those of adults and remain the same for individual children from day to day. Preferences are not based on ability to name a form rapidly, nor do they change when presentation is changed from two-dimensional to

three-dimensional form, when colors are varied, or when motivating factors are introduced. Preferences are not in accordance with Birkhoff's mathematical aesthetic theory, but are for forms that are regular, relatively complex, and with a high degree of rotational symmetry.

*The Expression of Meanings and Emotions in Music.* MELVIN G. RIGG, Oklahoma State College.

It is widely assumed that music can express not only various emotions, but also definite ideas, that it can suggest the early morning, a swan, or the various escapades of an outlaw. Although program commentators make their living pointing out for each opus its inner significance, experimental evidence is against them. College students, when asked to characterize unfamiliar selections, went far astray from the intentions of composers. The evidence, on the other hand, supports the view that music can portray emotions. Fast tempo, high register, and the major mode tend to suggest joy, and their opposites to suggest sorrow. Staccato notes indicate gaiety or agitation, as the passage is otherwise joyful or sorrowful. It is difficult to determine whether these connections are natural or artificial. With regard to tempo, register, and staccato notes, evidence for the former view may be secured from the natural reactions of children and animals in joy and sorrow and from the contrasting phases of manic-depressive insanity. The different emotional values of the major and minor modes may be merely the result of long association.

*An Observational Study of the Motility of School Children, Its Consistency, and Its Relation to Age, IQ, Sex, and Habitual Amount of Sleep.* ALAN D. GRINSTED, Louisiana State University.

An observational study was made upon children in their classrooms, the time-sampling technique being employed. The number of movements per observation for each child was calculated, and, when feasible, the results were treated statistically. The average amount of movement between two different days for the same 40 subjects showed a product-moment correlation of  $.40 \pm .09$ , revealing a consistency between individuals from day to day. Data on 123 children showed correlations of  $-.78 \pm .025$  between average amount of movement and age with IQ partialled out, and  $-.81 \pm .021$  between average amount of movement and IQ with age partialled out. No sex differences were found, and habitual amount of sleep proved to have no relation to motility when age was held constant.

*Training Observers in the Method of Teleonomic Description.* RAY S. MUSGRAVE, Millsaps College.

This report describes the procedures employed in training observers in the method of teleonomically describing behavior. It developed from F. H. Allport's exposition of teleonomic description and act analysis.

A short movie film of a woman doing a number of tasks in a home situation was shown to observers, individually. Each observer described

the behavior as it occurred, and an expert stenographer recorded his descriptions. The total number of acts described by an observer comprised his "observer achievement" score. At subsequent practice sessions Allport's unpublished act analysis was explained and illustrated by demonstrations. This was utilized by observers in describing behavior shown in practice films. Following the training session observers again were shown the original experimental film and again described the behaviors. Observer achievement scores were determined for this "retest" showing of the experimental film.

The average observer achievement score increased from 51.64 on the test to 97.43 on the retest—a difference of 45.79, which is statistically significant. Average observer agreement also increased 12.44% from test to retest.

*Racial Differences in the Occupational Status of White and Negro Persons in Georgia Between the Ages of 19 and 25 Years.* J. E. GREENE and JOE S. JACOB, University of Georgia.

*Scope of the Study:* The demographic data involved in the present comparisons were obtained from the 1938 School Census of Georgia. The Census schedule included the following items for each person between 19 and 25 years of age: (1) race, (2) sex, (3) chronological age, (4) employment status, (5) school grade last completed. Four categories of employment status were utilized, as follows: (1) unemployed, (2) employed on farms, (3) nonfarm employment, (4) students (*i.e.* in school).

*Procedures:* Racial differences were analyzed in terms of: (1) the amount, direction, and reliability of differences in the percentage of whites and negroes in each of the four employment categories; (2) the amount, direction, and reliability of the difference in the median school attainments of whites and negroes in each of the four employment categories. Subanalyses of the racial differences were made for each sex separately.

*Results:* Marked and statistically significant racial differences, generally favorable to whites, were noted in most of the above-described racial comparisons. Perhaps of outstanding practical significance is the finding that, among negroes, the probability of employment uniformly decreases as the amount of school training increases. Implications of the findings are discussed.

## PROCEEDINGS OF THE ELEVENTH ANNUAL MEETING OF THE EASTERN PSYCHOLOGICAL ASSOCIATION

HARRY HELSON, SECRETARY-TREASURER, BRYN MAWR COLLEGE

The Eleventh Annual Meeting of the Eastern Psychological Association was held at Chalfonte-Haddon Hall, Atlantic City, New Jersey, on April 5 and 6, 1940, with a total attendance of 555, of whom 199 were guests and the rest Members or Associates of the American Psychological Association. The presidential address was delivered Friday evening by F. L. Wells, of Harvard University, and was entitled "Mental Measurement and College Objective." The program consisted of 17 sessions in which 109 papers were read. Five instructional films were shown, and six round tables were held. One of the features of this year's meetings was the paper by Douglas Fryer, of New York University, which was read at the business meeting: "The New Bylaws in Relation to Our History." This paper gave the membership an enlightening survey of the Association from its inception, besides providing the background for the changes and innovations in the revised bylaws adopted this year.

*Elections.* President, 1940-1941: W. S. Hunter, Brown University; Secretary-Treasurer, 1940-1943: Harry Helson, Bryn Mawr College; Board of Directors, 1940-1943: Elmer Culler, University of Rochester, and Irving Lorge, Teachers College. The Program Committee, appointed by the Directors for 1940, is as follows: D. G. Marquis, Yale University; L. W. Max, New York University; and R. A. McFarland, Chairman, Harvard University. With the new method of elections provided by the revised bylaws, the Nominating Committee passes out of existence.

The following actions were taken at the Annual Business Meeting:

- (1) Proceedings of the 1939 meeting as printed in the *Psychological Bulletin* were approved and accepted.
- (2) The financial report of the Secretary-Treasurer for 1939-1940, as of April 1, was accepted.
- (3) A budget totaling \$510.00 for 1940-1941 was adopted with an amendment that the Directors may authorize increases in expenditures if it is necessary in the execution of the new bylaws.
- (4) The invitation of Brooklyn College for the Association to meet there on April 18 and 19, 1941, was accepted.
- (5) The Board of Higher Education of New York City was urged to maintain its support of the appointment of Bertrand Russell as Pro-

fessor of Philosophy in City College. Another motion relating to this question requires that, if any use is made of the Russell resolution, the following facts be given with it: number of members in the Association (557), number present at the business meeting (75), number voting for the resolution (37), and number voting against it (23).

(6) The new bylaws as revised by the Committee on Revision of the Bylaws, under the chairmanship of Douglas Fryer, were adopted in principle for one year, with final action to be taken at the next annual meeting after detailed changes necessary for translating them into action. Copies of the new bylaws may be obtained from the Secretary-Treasurer.

The financial statement of the Association for the year 1939-1940, verified by the Auditing Committee, consisting of C. C. Pratt, of Rutgers University, and S. W. Fernberger, of the University of Pennsylvania, is as follows:

*Income*

Membership Dues:

Late 1938-1939 Dues.....	\$5.00
Dues for 1939-1940.....	557.00
Dues paid in advance of 1939-1940.....	5.00
Guest Fees .....	51.75
Interest on Savings Account.....	7.67
Stamps Carried Over From 1938-1939.....	4.15
 Total Income.....	 \$630.57

*Expenditures*

Printing 1938-1939 Proceedings in the <i>Bulletin</i> ...	\$33.00
Postage, Telephone, Express.....	74.88
Program: Printing, Committee, Registration.....	134.83
Mimeographing Revised Bylaws.....	33.00
Lantern Operators at Atlantic City.....	34.00
Secretary-Treasurer's Office .....	88.58
Refunds and Discount.....	1.12
 Total Expenditures.....	 399.41
 Surplus for the Year 1939-1940.....	 \$231.16

*Balance Sheet*

Cash: Fifth Avenue Bank.....	\$551.11
New York Savings Bank.....	512.50
Stamps on Hand.....	3.45
	-----
	\$1067.06
Capital: As of June 1, 1939.....	\$832.45
Surplus, 1939-1940.....	231.16
Cash Value of Stamps.....	3.45
	-----
	\$1067.06

Names of sessions and papers were as follows:

#### METHODOLOGY AND STATISTICS

ANNE ANASTASI, Chairman

*Psychology and the Philosophy of Science.* H. ROGOSIN, New York University.

*A Statistical Method of Choice-Pattern Analysis.* C. T. MORGAN, Harvard University.

*Components of Individual Differences in Maze Ability.* R. C. TRYON, University of California.

*On the Treatment of Qualitative Results in Small-Scale Experiments.*

JOSEPH ZUBIN, New York State Psychiatric Institute and Hospital.

*Structure of the Learning Curve.* E. A. CULLER, University of Rochester.

*More Evidence of the Nonadaptiveness of Normal Curve Statistics.* J. L.

GRAHAM, Lehigh University.

*Control in Idiographic Experimentation.* W. D. TURNER, Ella Lyman Cabot Foundation.

#### APPLIED PSYCHOLOGY

T. W. FORBES, Chairman

*A Treatise on Applied Psychology From 1760.* MICHAEL ERDÉLYI, University of Scranton.

*Satisfactions in Work.* J. M. SEIDMAN, New Jersey Department of Institutions and Agencies.

*Application of a Gradient Technique to the Study of Occupational Prestige.* C. E. OSGOOD, Dartmouth College.

*A Study of Last vs. Usual Purchase Questions.* L. P. GUEST, University of Maryland.

*The Predictive Efficiency of Three Group Tests in a Technical-Industrial High School.* A. J. MITRANO, Board of Education, Rochester, New York.

*Preliminary Report on Factors Related to Musical "Aptitude."* G. M. GILBERT, Connecticut College for Women.

*Effect of Age, Intelligence, Training on Reactions to Classic and Modern Music.* GRACE RUBIN-RABSON, New York City.

*Emotion Is a Substitute Response.* H. S. TUTTLE, College of the City of New York.

#### CUTANEOUS AND AUDITORY PROCESSES

KARL M. DALLENBACH, Chairman

*The Present Status of the Sensory Functions of the Cutaneous Glomus Body.* B. von HALLER GILMER, Carnegie Institute of Technology.

*Requirements for an Adequate Theory of Temperature Sensitivity.* W. L. JENKINS, Lehigh University.

*Experimental Observations of Pain Sensation in Man.* J. D. HARDY, H. G. WOLFF, and H. GOODELL, Cornell University Medical College.

*The Locus of Distortion in the Ear.* E. G. EVER, C. W. BRAY, and MERLE LAWRENCE, Princeton University.

*Hearing by Electrical Stimulation of the Human Cochlea and Auditory Nerve.* S. S. STEVENS, R. CLARK JONES, and M. H. LURIE, Harvard University.

*The Effect of Partial Section of the Cochlear Nerve Upon Hearing.* W. D. NEFF, University of Rochester.

*The Binaural Intensity Disparity Limen in Auditory Localization.* ADELBERT FORD, Lehigh University.

### PHYSIOLOGICAL PSYCHOLOGY

S. W. FERNBERGER, Chairman

*Partial Hungers.* P. T. YOUNG, University of Illinois.

*A Three-Dimensional System for Classifying Human Physiques.* W. H. SHELDON and S. S. STEVENS, Harvard University.

*The Time of Administration and Some Effects of Caffeine.* J. E. BARMACK, College of the City of New York.

*Affective Reactions and Gastric Function.* BELA MITTELmann and H. G. WOLFF, Cornell University Medical College.

*Further Analysis of Central or Synaptic Learning and the Peripheral Response in the Spinal Dog.* P. S. SHURRAGER and H. C. SHURRAGER, University of Rochester.

### SOCIAL PSYCHOLOGY

BARBARA BURKS, Chairman

*The Interests of Adolescent Boys.* L. E. ABT, New York City.

*Refugee Adjustment in the United States.* G. H. SAENGER, New York City.

*The Social Maturity of Adolescent Delinquents: A Study of White and Negro First Offenders and Recidivists.* N. N. SPRINGER, Adolescents' Court, Brooklyn, New York.

*Psychological Factors Influencing Accuracy of Census Data and Opinion Polls.* J. B. MALLER, New York University.

*The Social Psychology of Law.* S. H. BRITT, George Washington University.

### PERCEPTION AND MEMORY

WOLFGANG KÖHLER, Chairman

*Experience as a Factor in Perceptual Organization.* N. G. HANAWALT, Rutgers University.

*The Fractionation of Temporal Intervals.* R. S. CRUTCHFIELD, Mount Holyoke College.

*Progressive Change in Memory Traces.* ERICH GOLDMEIER, Wheaton College.

*Emotional Factors in Memory Experiments.* WERNER WOLFF, New York City.

*Phantom Limbs.* S. FELDMAN, Cornell University.

## BRAIN FUNCTION

E. A. CULLER, Chairman

*Interrelations of Nervous Structures in Binocular Vision.* JACOB LEVINE, Harvard University.*Conditioned Locomotor Responses in Cats With Observations on Their Establishment and Extinction After Removal of the Frontal Lobes.* K. U. SMITH, University of Rochester.*Visual Intensity Discrimination in the Cat Following Removal of the Visual Cortex.* L. C. MEAD, Tufts College.*Flicker Discrimination in the Cat Following Removal of the Visual Cortex.* W. E. KAPPAUF, University of Rochester.*The Establishment of a Token-Reward Habit in Cats Before and After Removal of the Frontal Areas of the Cortex.* GLENDON RAYSON and MARGARET F. SMITH, University of Rochester.*A Study of Three Preadolescent Children With Different Types of Cerebral Lesions.* M. R. HARROWER ERICKSON, McGill University.

## CONFLICT AND MOTIVATION

DANIEL KATZ, Chairman

*Factors Inducing Conflict in the Choice Behavior of Children.* ELIZABETH GODEBEER, Yale University.*Behavior of Rats Submitted to Instinctual Conflict.* J. McV. HUNT and HAROLD SCHLOSBERG, Brown University.*The Influence of Conflict Upon the Identical and Incompatible Components of Two Simple Reaction Patterns.* N. E. MILLER, R. C. B. MORTON, and JACQUELINE JONES, Yale University.*Gradients of Generalization in a Nonspatial Stimulus Dimension and Their Implications for Discrimination Conflict.* J. S. BROWN, Yale University.*An Experimental Investigation of the Conditions of Substitution.* MARY HENLE, Swarthmore College.*Certain Effects of Quantitative Variation of Food-Incentive on the Performance of Physical Work by Chimpanzees.* F. MILFORD FLETCHER, Yale University.*Gambling Behavior: A Comparative Approach.* L. P. CRESPI, Princeton University.

## VISUAL PROCESSES

S. S. STEVENS, Chairman

*A New Experimental Test of Hecht's Theory of Visual Acuity.* C. E. BERGER, Cornell University.*Cross-modal Interaction.* R. W. BURNHAM, Rutgers University.*The Purkinje After-Image on the Rod-free Area of the Retina.* THEODORE KARWOSKI, Dartmouth College.*Colorimetric Purity Curves for Chimpanzee and Man.* W. F. GRETHER, Yale University.

*A Technique for the Electrical Recording of Eye-Movements in Adult and Fetal Guinea Pigs.* LEONARD CARMICHAEL, Tufts College.

*Light Sensitivity in Relation to Age.* ROSS MCFARLAND, Harvard University.

*Time-Errors in Judgments of Visual Extents.* P. V. MARCHETTI, Rutgers University.

#### TESTS AND MEASUREMENTS

H. SHERMAN OBERLY, Chairman

*Intelligence Tests of the Blind.* S. P. HAYES, Mount Holyoke College.

*An Analysis of the Probable Error of the IQ.* H. M. HILDRETH, Syracuse University.

*Twin Sibling and Chance IQ Differences.* J. D. PAGE, University of Rochester.

*The Derivation and Use of Three Subscores From the 1937 Revision of the Stanford-Binet Scales.* F. B. DAVIS, Avon Old Farms, Avon, Connecticut.

*"Consecutive" vs. "Adaptive" Testing.* M. L. HUTT, College of the City of New York.

*Fifth Revision of Kuhlmann-Anderson Tests.* R. G. ANDERSON, Psychological Corporation.

*Measuring Dynamic Aspects of Behavior Among Adolescents.* THEODORA M. ABEL, New York City.

#### FILMS

D. G. MARQUIS, Chairman

*Motor and Sensory Laterality in Feet.* L. PEARL GARDNER, Cornell University.

*A Study of Dominance in Rats.* J. S. KORNREICH, Yale University.

*Effect of Second-Order Conditioning Upon the First-Order Conditioned Stimulus.* W. F. ECCHER, University of Rochester.

*The Effect of Cortical Lesions Upon the Copulatory Behavior of Male Rats.* F. BEACH, American Museum of Natural History.

*A Genetic Study of a Preschool Child.* ANNA S. STARR, Rutgers University.

#### INSTRUCTIONAL FILMS IN PSYCHOLOGY PRODUCED AT COLUMBIA UNIVERSITY

*Development and Behavior of the White Rat.* C. J. WARDEN and T. A. JACKSON.

*Problem-Solving in Monkeys.* C. J. WARDEN.

*The Experimental Psychology of Vision.* G. M. GILBERT.

*Color Vision.* G. M. GILBERT.

*Testing Animal Intelligence.* C. J. WARDEN and G. M. GILBERT.

#### ABNORMAL PSYCHOLOGY

J. Q. HOLSOOPPLE, Chairman

*Preliminary Experimental Studies in Constitutional Psychopathic Inferiority.* R. M. LINDNER, U. S. Penitentiary Hospital.

*An Investigation of Subject Matter in Spontaneous Artistic Productions by the Insane.* ANNE ANASTASI, Queens College, and J. P. FOLEY, George Washington University.

*Perseveration in Dementia Praecox and the Manic-depressive Psychoses.* A. I. RABIN, New Hampshire State Hospital.

*The Rorschach Method as an Instrument of Prognosis in the Insulin Treatment of Schizophrenics.* ZYGMUNT PIOTROWSKI, Columbia University.

*Psychological Defense Mechanisms as Revealed by the Rorschach Test.* W. W. MARSEILLE, New York City.

*Personality Structure and the Psychoneuroses.* F. R. MIALE and M. R. HAROWER ERICKSON, McGill University.

#### LEARNING AND CONDITIONING

HAROLD SCHLOSBERG, Chairman

*Features of Maze Mechanics as Determinants of Maze Organization.* H. A. WITKIN, Swarthmore College.

*The Generalization of Extinction Effects in the Bar-pressing Response of the Rat.* S. B. WILLIAMS, Yale University.

*Various Forms of Repetition in Human Learning.* GEORGE KATONA, New School for Social Research, New York City.

*Determinants of the Consolidation (Memorial Generalization-Differentiation, or "Prägnanz") of Conditioned Preferences.* G. H. S. RAZRAN, Queens College.

*The Strength of an Excitatory Tendency as a Joint Function of the Amount of Reinforcement and the Degree of Hunger.* C. THEODORE PERIN, Yale University.

*Some Effects of Speed on the Development of a Mechanical Attitude in Problem-Solving.* S. E. ASCH, Brooklyn College.

*Maintenance and Disintegration of a Discrimination "Set."* C. I. HOVLAND, Yale University.

#### CHILD PSYCHOLOGY

A. T. JERSILD, Chairman

*Home Conditions of Problem Children at an English Elementary School.* ALICE FRIEDMAN, New York City.

*A Comparison of the Adjustment Behavior of Elementary School Children Under Different Experimental Conditions.* W. M. HINTON, Washington and Lee University.

*Performance of Navaho Indian and Maya-Spanish Children on the Goodenough Drawing Test.* ELAINE F. KINDER and C. F. LO, Letchworth Village.

*Neural Maturation as Exemplified in the Achievement of Bladder Control.* MYRTLE B. McGRAW, Babies' Hospital, New York City.

*An Experimental Study of the Ability to Reason.* LOUIS LONG and LIVINGSTON WELCH, Columbia Medical Center and Hunter College.

*A Method of Studying Frustration in Children.* H. G. SEASHORE, Springfield College.

## SOCIAL ATTITUDES

G. W. HARTMANN, Chairman

*Background Correlates of Primary Social Attitudes.* L. W. FERGUSON, University of Connecticut.

*A Preliminary Study of Certain Problems in Attitude Research.* W. S. NEFF and J. J. HORWITZ, College of the City of New York.

*Some Considerations for a Dynamic Interpretation of War Attitudes.* ROSS STAGNER, Dartmouth College.

*Stereotyped Opinions Regarding Nationalities.* I. L. CHILD, Harvard University, and L. W. DOON, Yale University.

*Differential Test Responses to Differently Qualified Members of Ethnic Groups.* ALEXANDER MINTZ and E. L. HOROWITZ, College of the City of New York.

*Racial Stereotypes of a Group of Negro College Students.* J. A. BAYTON, Virginia State College.

*An Investigation of Stereotypes of the Sexes.* NORMAN FREDERIKSEN, Princeton University.

## PERSONALITY

KURT LEWIN, Chairman

*Some Factors Governing Changes in the Meaning of Level of Aspiration.* HELEN B. LEWIS and ROSALIND GOULD, Brooklyn College.

*Level of Aspiration in Relation to Some Variables of Personality: Clinical Studies.* PAULINE S. SEARS, Yale School of Medicine.

*Some Sociological Determinants of "Level of Aspiration."* ROSALIND GOULD, Brooklyn College.

*Personality vs. Intelligence in Test Interpretation.* JOSEPH JASTAK, Delaware State Hospital.

*An Interpretation of Security-Insecurity.* A. H. MASLOW, Brooklyn College.

*An Objective Test of Character-Temperament.* R. B. CATTELL, Clark University.

*The Validity of the Individual's Responses to Personality Questionnaire Items.* PHILIP EISENBERG, Brooklyn College.

*Mistakes of a Higher Order.* LESLIE ERDOS, Newark, New Jersey.

## BRAIN FUNCTION

K. S. LASHLEY, Chairman

*The Rôle of the Auditory Area of the Cortex.* EDWARD GIRDEN, Brooklyn College.

*Mapping the Auditory Cortex of the Dog.* E. A. LIPMAN, University of Rochester.

*An Electrical Investigation of the Auditory Cortex of the Cat.* J. C. R. LICKLIDER, University of Rochester.

*Neural Correlates of Stimulation-Frequency in the Higher Auditory Centers of the Cat.* J. D. COAKLEY and E. A. CULLER, University of Rochester.

*Psychological Tests of Psychiatric Patients Undergoing Operation of Prefrontal Lobotomy.* THELMA HUNT, George Washington University. *A Study of Eight Cases of Section of Corpus Callosum in Individuals With History of Epileptic Seizures.* FRANCES H. PARSONS, University of Rochester.

#### ROUND TABLES

*Selection and Training of Civilian Airplane Pilots.* J. G. JENKINS, Chairman, University of Maryland.

*The Effects of Frustration.* A. H. MASLOW, Chairman, Brooklyn College.

*The 1937 Revision of the Binet Test.* R. T. ROCK, Chairman, Fordham University.

*The Psychology of Social Change.* ROSS STAGNER, Chairman, Dartmouth College.

*The Licensing of Psychologists.* R. C. CHALLMAN, Chairman, Columbia University.

*The Census From the Standpoint of Social Psychology.* J. B. MALLER, Chairman, New York University.

PROCEEDINGS OF THE FIFTEENTH ANNUAL MEETING  
OF THE MIDWESTERN PSYCHOLOGICAL  
ASSOCIATION

ROBERT H. SEASHORE, SECRETARY-TREASURER,  
NORTHWESTERN UNIVERSITY

The Fifteenth Annual Meeting of the Midwestern Psychological Association was held at the University of Chicago on Friday and Saturday, May 3 and 4, 1940. The number of registered members and visitors was 565. A special lecture was given by Dr. Nicholas Rashevsky, of the Department of Physiology at the University of Chicago, on "The Physical Basis of Neuropsychological Phenomena."

At the annual business meeting, held on Friday afternoon, 82 new members were elected, bringing the present membership to 517. The Treasurer's report showed a carry-over and new income of \$616.45 for the year ending May 8, 1940, and a total expenditure of \$314.27, leaving a cash balance of \$302.18. The Council announced the next place of meeting as Ohio University, the last week of April or the first week of May, 1941, the exact dates to be decided later.

The newly elected officers of the Association were announced as follows: President, 1940-1941: E. K. Culler, University of Rochester; Council Members: H. F. Harlow, University of Wisconsin (1940-1943); A. W. Brown, Institute for Juvenile Research (1940-1941, to fill out unexpired term of E. K. Culler).

PROGRAM

SESSION A. GENERAL

Friday Morning, May 3

J. P. GUILFORD, Chairman

*Fundamentalism, Isolationism, and Biological Pedantry vs. Sociocultural Orientation in Psychology.* S. L. PRESSEY, Ohio State University.

The paper argues that psychology has been so busy developing its relationship to the biological sciences that it has neglected its basic position in the social sciences and the contributions they can make to psy-

chology. Various data are presented, as textbook analyses compared with evidence as to major present-day problems.

*Comparative Retention of Open and Closed Visual Patterns.* HERBERT GURNEE, Western Reserve University.

Subjects were presented visual designs, half of which were open and half closed. Percentages of correct recognitions were approximately the same for the two conditions. Other subjects, tracing the designs, were interrupted on half of them. Results were again approximately the same.

*Some Factors of Pleasantness in Visual Design.* LLEWELLYN WILEY, University of Illinois.

A factor analysis was performed upon the "pleasantness" scores given to 14 abstract designs by 50 raters, who were chosen from 138 undergraduate subjects because their retest correlations exceeded +.50. The designs selected were those samples from 50 which five artists rated most differentially in symmetry, balance, rhythm, unity.

*The Frequency of Color Blindness.* CHRISTIAN A. RUCKMICK, C. H. Stoelting Company, Chicago, Illinois.

An investigation of a heterogeneous group of over 3000 human subjects in regard to color blindness revealed the fact that about 7% of the males and .39% of the females were defective, most of them with respect to both red and green: The Ishihara test was used.

*Effects of Difficulty Level Upon Thinking Processes.* S. S. SARGENT, Central Y. M. C. A. College.

Study of various difficulty levels of the disarranged word problem shows a drop in correlation between performance at easy and difficult levels. Analysis of talking-out reactions reveals that different thinking processes underlie success at different levels of difficulty; operationally, easy and difficult disarranged words are different kinds of problems.

*Words as Configurations.* M. NISSENNON, Central Y. M. C. A. College.

An experimental check is made of the hypothesis that meaningful verbal configurations display a "Gestalted" character and resist reassembling into new combinations or words. Revised techniques yield data indicating operation of words as "Gestalten" varying in effect within a range of individual differences. Subject's reports are discussed.

*Multidimensionality in Scaling Concepts of Government.* WILLIS C. SCHAEFER, University of Chicago.

Extensions of the psychophysical methods are applied to an attitude scale on governments in determining the combined complexity of concepts and continuum. A three-dimensional structure shows bipolar placement of democracies *vs.* totalitarian states, Russia requiring an additional dimension. Problems of the methods are similar to those of the factorial methods.

*A Portable Apparatus for the Analysis of Time and Motion in Industrial Operation and Other Motor Skills.* E. G. BRUNDAGE and JOSEPH TIFFIN, Purdue University.

This paper describes a simple, portable, and inexpensive apparatus for plotting the time motion patterns in industrial operations and motor skills. Stereoscopic slides showing the use of the equipment in analyzing factory operations and motor skills will be shown. The apparatus will be exhibited.

#### SESSION B. ELECTROPHYSIOLOGY

CARL N. REXROAD, Chairman

*Cultivated Relaxation in Psychoneuroses.* EDMUND JACOBSON, Laboratory for Clinical Physiology, Chicago, Illinois.

Evidence is presented that from a physiological standpoint psychoneuroses can be classified as forms of neuromuscular hypertension with specific pathological habit formations. In some instances, organic pathology is present and plays a rôle in the neuropathogenesis. Electrical measurements of states of neuromuscular tension furnish objective data, including results of treatment.

*The Rôle of Muscular Tension in the Comparison of Lifted Weights.* BRYAN PAYNE and R. C. DAVIS, Indiana University.

Results of an electromyographic study of weight lifting show evidence supporting a peripheral theory, with emphasis upon the importance of foreperiod and interlift tension, and upon the V/S tensional ratio in determining what the judgment will be. The computed weight at which  $V/S=1$  approximates the limen found by linear interpolation.

*Muscular Action Potentials and the Time-Error Function in Lifted Weight Judgments.* G. L. FREEMAN, Northwestern University.

In relaxed subjects, the course of muscle action potential residuals following the lifting of a standard weight is cyclical in character and tends to be related to the occurrence of negative and positive time errors in the judgment of an equivalent weight, imposed at various intervals following the first lift.

*Effects of Residual Tension on Output and Energy Cost in a Second Period of Ergographic Work.* L. H. SHARP, Northwestern University.

Total output, in the second of a double period of maximum effort in ergographic work, is significantly greater if commenced when the reacting muscles have gained the maximum state of heightened tension resulting from the first work period. Energy cost and feelings of effort are less in the second work period.

*The Electrical Conductance of the Brain and Its Significance.* CHESTER W. DARROW and ERNST GELHORN, University of Illinois College of Medicine.

In cats anaesthetized with chloralosane it is found that conditions such as  $O_2$ -lack and asphyxia which decrease the conductance of the brain also reduce the action potentials in the auditory area, induced by an auditory stimulus, and that conditions which increase conductance, such as adrenalin and metrazol, increase the action potentials.

*Shifts in the Energy-Frequency Spectrum of the Human Electroencephalogram During Sleep.* C. E. HENRY, University of Iowa, F. A. GIBBS, Harvard Medical School, and J. R. KNOTT, University of Iowa.

Fourier transforms of left motor areas during sleep indicate energy shifts, associated with depth of sleep, toward the slower frequencies and the emergence of a new energy peak at 12-14 cycles; individuals easily differentiated by waking transforms are not easily distinguished during sleep; categorical "types of sleep waves" do not adequately describe the phenomena occurring.

*A Method for Quantifying Action Potentials.* LAWRENCE N. MARX, Stout Institute.

A method for quantifying photographically or mechanically recorded gross action potentials is described and justified. This method makes every individual his own "control" by being cognizant of variations in electrical output from individual to individual, chance or deliberate variations in amplification, and the relative temporal values of the sections measured.

#### 1. SYMPOSIUM: CONFLICT AND ADJUSTMENT

N. R. F. MAIER, Chairman

#### 2. SYMPOSIUM: ANALYSIS OF VARIANCE

DAEL L. WOLFLE, Chairman

#### PSI CHI LUNCHEON

Friday Noon, May 3

#### SESSION A. ANIMAL LEARNING

Friday Afternoon, May 3

HEINRICH KLÜVER, Chairman

*Changes in Response of Chimpanzees to Size Stimuli Following Training on Single Stimulus.* KENNETH W. SPENCE, University of Iowa.

Chimpanzee subjects that had previously been trained to choose the larger (or smaller) of two stimuli were subsequently trained negatively on

single stimuli. Tests with pairs of stimuli following this training indicated reversals of the original response. The relation of the results to the writer's theory of transposition is discussed.

*Strength of Pull as a Symptom of Strength of Motivation in Rats.*

CLAUDE E. BUXTON, Northwestern University.

Apparatus is described for the continuous measurement of strength of pull by rats running to food. Clear goal gradients of pull appeared. The effects of the following on slopes of gradients were studied in a preliminary investigation: total distance to be pulled; alternation of short and long pulls; number of trials.

*The Strength of a Thorndikian Response as a Function of the Number of Practice Trials.* LLOYD G. HUMPHREYS, Northwestern University.

Williams has published equations expressing the relationship between number of reinforcements and measures of strength of a Thorndikian response. This supposed relationship was investigated both by varying practice trials while holding reinforcements constant and by the reverse procedure. The results indicate that Williams' equations relate strength of response to number of practice trials, not reinforcements.

*Validity of the Components of Maze Ability.* ROBERT C. TRYON, University of California.

Degrees of fit of psychological components shown to fit blind difficulties of a 17 T-unit maze are good with other behaviors *in situ* which the components should influence, namely: full and partial errors, retracings, and speed. Predicted blind difficulties of a second maze correlate .70 with actual; minor changes give .92.

*The Evolution and Regression of Correct Choices in the Double Alternation Problem of the Temporal Maze.* S. D. EVANS, Federal Security Agency, Chicago, Illinois.

The mechanism of elimination of the two persistent blind-alley responses of white rats on the double alternation problem in the temporal water maze was found to be blind-alley shortening through a hierarchy of transition steps of greater or less length. Stimulus changes were accompanied by a corresponding hierarchy of regression.

*Conditioned Flexion Responses in Dogs Re-established and Maintained With Change in Locus in the Application of the Unconditioned Stimulus.* W. B. BROGDEN, University of Wisconsin.

Forelimb flexion responses to shock, once conditioned and extinguished, are reconditioned and maintained similarly, when shock application is elsewhere or when application is at the left forepaw.

*Constant Motivation During the Conditioning of Dogs.* W. N. KELLOGG, Indiana University.

Graphs of the voltage necessary to maintain a uniform unconditioned flexion response during the buzz-shock conditioning of dogs were found to possess characteristics of the S-shaped learning curve. This decrease

in sensitivity with training is explained as a result of reduced general activity and lessened muscular tension.

#### SESSION B. MENTAL TESTS

GRACE E. MUNSON, Chairman

*The Fels Child Behavior Ratings: Initial Report.* MARJORIE POWELL, Samuel S. Fels Research Institute.

A new set of rating scales developed at the Fels Institute is presented with reference to factors of technique, reliability, and correlation with other behavioral indices. The data presented were obtained on nursery school children. Certain unique features of the scales are stressed.

*A Comparison of the Original and the Revised Stanford-Binet Intelligence Scales.* MARTIN L. REYMERT and RALPH K. MEISTER, Mooseheart Laboratory for Child Research.

Four hundred and forty children were given two to nine annual examinations. The correlation of scores on the two scales is compared with the reliabilities to estimate the equivalence of ratings. The scales are analyzed by age levels. Changes in IQ, variability, scattering, and inversions in basal age and item level are investigated.

*Range of Success on the Revised Stanford-Binet Examination.* GEORGE S. SPEER, Child Guidance Service, Springfield, Illinois.

Scatter exhibited by 610 children on the Revised Stanford-Binet examination is studied in relation to test from CA, MA, IQ, basal age, sex, color, problem or delinquent behavior, and combinations of these factors. Certain statistically significant relationships are found and discussed.

*Limitations in Studying the Mental Development of Adoptive Children.* HARRIET L. RHEINGOLD and FRANCES C. PERCE, Institute for Juvenile Research.

In studying the mental development of adoptive children the experimenter encounters certain difficulties, including limited predictive value of infant tests and inadequate measures of the total environment. These difficulties will be critically examined with reference to the literature, and a description of a study recognizing these limitations will be given.

*A Psychological Study of the Nature of Mental Deficiency.* H. WILKES WRIGHT, University of Wisconsin.

The goal of this study was the construction of a performance battery-test of diagnostic value in the training of mental deficient, and the revision of the distinctions between moron, imbecile, and idiot in terms of the basic psychological functions which these tests measure.

*The Relation Between the Subtests of the American Council Psychological Examination, High School Rank, and Four-Year College Subject Grades.* CHESTER H. RUEDISILI, University of Wisconsin.

Four-year college grades in six different subject fields, for 415 graduates, were correlated with the American Council Psychological Examination (subtests and total) and with high school rank. From the 78 correlations found, multiple correlation coefficients were calculated for each subject field, the highest being .79 for mathematics.

*Some Factors in Reading Achievement at the College Level.* MARGARET PANKASKIE, University of Iowa.

The part scores of the Iowa Silent Reading Test, together with scores on the Iowa English Training Examination, Part 4 (vocabulary), and the Iowa Mathematics Aptitude Test, Part 4 (reading mathematics), yielding a total of 11 variables, were factor analyzed by the centroid method. The analysis indicates the presence of three factors tentatively identified as speed-comprehension, vocabulary, and ability to find answers to questions.

### SESSION C. ATTITUDES

LUTON D. ACKERSON, Chairman

*Confidence and Achievement in Eight Fields of Knowledge.* DONALD M. JOHNSON, Fort Hays Kansas State College.

Confidence scores of high reliability were obtained from 96 subjects taking vocabulary tests in eight different fields. Analysis of the results shows that the confidence expressed is more closely related to a general factor of confidence in the individual than to achievement.

*Leadership Training in Industry.* VERNON G. SCHAFER, Pennsylvania State College.

Seventy-five workmen were selected and trained for foremanship in industry. The course of instruction dealt with organization and human relations problems of supervision.

The men were ranked and adjudged on their qualifications as supervisors. The progress of the men will be followed for a period of years.

*A Comparative Study of the Psychological Effects of Economic Security.* L. M. HANKS, JR., University of Illinois.

The psychological effects are studied of a dole economy and a capitalistic economy on two Indian reservations of common culture. Despite the security under the dole, Indians complained of insufficient benefits, thinking that the agent was withholding their rightful funds.

*Changes in the Opinions of Female Students After One Year at a University.* STEPHEN M. COREY, University of Wisconsin.

Six of Thurstone's attitude scales were administered twice to 100 university women with a year interval elapsing between the administrations. The changes were not marked, but were consistently in the direc-

tion of increased liberalism. There was a slight but consistent tendency for the brighter students to change less.

*Attitudes as a Factor Influencing Remembering.* ALLEN L. EDWARDS, Northwestern University.

A prose passage was composed which contained an equal number of favorable and unfavorable statements about the New Deal. Differences in retention of favorable and unfavorable facts contained in the passage for Group I (strongly in favor of the New Deal), Group II (neutral), and Group III (strongly opposed to the New Deal) were compared by R. A. Fisher's analysis of variance.

*The "Chicago Tribune" and the Republic Steel Strike: An Analysis of One Newspaper's Influence on Public Opinion.* JOHN C. EBERHARD, Northwestern University.

Thirty months after a clash between police and strikers in Chicago 150 adult students were tested for memory of the event, for sources of information about it, and for labor attitudes. Analysis of the effects of the latter two factors showed both to be influential in determining accuracy of memory.

*Propaganda in News Reports About Finland.* B. SEGAL, Central Y. M. C. A. College.

Study of news reports on the Finnish-Russian conflict in three metropolitan newspapers and (Communist) *Daily Worker* reveals wishful thinking, slanting and editorizing, using emotionalized terms, playing up, playing down, omitting news, linking domestic issues with Finnish situation, and presenting appeals and editorials with news from Finland.

#### 1. SYMPOSIUM: CURRENT BEHAVIOR THEORY

CLARK L. HULL, Chairman

#### 2. SYMPOSIUM: PROFESSIONAL PROBLEMS IN PSYCHOLOGY

EDMUND S. CONKLIN, Chairman

#### FILMS, EXHIBITS, DEMONSTRATIONS

*Effects of Climate on Human Behavior* (colored moving picture film). RAYMOND H. WHEELER, University of Kansas.

A summary of totalitarian, absolutistic, and socialistic periods of history in their alternations with democratic and individualistic periods. Their relation to warm and cold phases of climatic fluctuations, respectively. World maps showing in colors the positions of known warm, cold, wet, and dry areas and the locations of totalitarian *vs.* democratic cultures, 600 B.C. to 1930.

## SESSION A. SENSORY AND MOTOR PHENOMENA

Saturday Morning, May 4

ROBERT H. GAULT, Chairman

*The Re-education of Defective Hearing.* LOUIS D. GOODFELLOW, Northwestern University.

Paper discussing laboratory techniques based on four fundamental facts used to teach partially deaf to make better use of marginal residue of hearing. Low correlation exists between D.L.'s and R.L.'s for speech sounds. Adaptation to frequency distortion can be extended by training with appropriate filter networks. Incidental cues and individual's attitude to deafness are important.

*Cortical Function in the Mediation of Responses to a Tone.* L. A. PENNINGTON, University of Illinois.

Rats trained to respond to a 1000-cycle tone showed disturbances in postoperative retention tests only when a small cortical area had been bilaterally removed. The data suggest anatomical and functional subordinate localization within the auditory area of the rat's cerebral hemispheres.

*The Measurement of Musical Eminence.* PAUL R. FARNSWORTH, Stanford University.

The present paper attempts to compare two procedures for the measuring of eminence in the field of music: the encyclopedia method (number of inches devoted to each eminent person) and the pooling technique. A secondary consideration is to study the consistency of each method, i.e. the agreement among encyclopedias and between pools.

*Effect of Visual Adaptation Upon Intensity of Light Preferred for Reading.* MILES A. TINKER, University of Minnesota.

Subjects chose light intensities for comfortable reading after adaptation to (1) 8 foot-candles and (2) 52 foot-candles of light. Visual adaptation largely determined the brightness preferred. Prescribing light intensities for reading in terms of preferred brightness, therefore, is invalid.

*Reliability of Testimony for Visual Observations.* HERMAN G. CANADY, Northwestern University.

The Kendall-Seashore-Hazelhurst objective test for accuracy of report after observing a photograph (optic situation) has been simplified, standardized, and analyzed for effects of instructions, confidence, type of questions, immediacy of report, sex differences. The test is available.

*Group Factors in Speed of Simple and Discriminative Reactions.* JOHN HELMICK and RAYMOND STARMANN, Northwestern University.

Speeds of simple and discriminative reactions to visual stimuli, with and without preparatory warning, are intercorrelated to see how they are related to a similar factor previously located by factorial analysis.

*An Experimental and Correlational Analysis of Factors in Motor Steadiness.* ERNEST A. HAGGARD, Northwestern University.

A battery of eight steadiness tests was administered to 50 male university students to investigate the quantitative boundaries of a group factor in motor steadiness. Although a moderately extensive factor was found to exist, it does not cover all tests. Pattern of performance was shown to be of considerable significance.

#### SESSION B. CLINICAL PSYCHOLOGY

CAROLINE TRYON, Chairman

*Some Practical Considerations in the Formulation of Clinical Recommendations.* GEORGE A. KELLY, Fort Hays Kansas State College.

Both for psychologists and for the recipients of the psychologist's recommendations, devices are needed which will give character and pattern to individual case studies. Clinical recommendations are more likely to be followed if they include characterization and prediction in addition to comprehensive, crucial, incidental, and supplementary recommendations.

*Observations on the Use and Efficacy of Changing a Patient's Concept of His Rôle—A Psychotherapeutic Device.* ETHEL EDWARDS, Fort Hays Kansas State College.

Semantics attempts to achieve psychotherapeutic results by changing a patient's orientation so that he perceives himself as if in a new life rôle. In the present study the technique was partially standardized and typical failures and successes observed.

*Personality Factors in Assortative Mating.* E. LOWELL KELLY, Purdue University.

Personality ratings by five judges on 36 traits were obtained from 300 engaged couples. The raw assortative mating coefficients ranged from zero to +.42 with a median of +.13. Corrected for attenuation, the range is from zero to +.74 and the median +.21. No negative correlations were found. The data support the theory of homogamy in human mating.

*A Study of Individual Differences in Electrical Resistance.* M. A. WENGER, Samuel S. Fels Research Institute.

Norms and reliability coefficients are reported for palmar and non-palmar skin resistance in 62 children. Conductance and log conductance were studied. Humidity and/or season affected the data. Conductance was correlated with other physiological and psychological variables and found to be useful in a test battery of Autonomic NS function.

*Blood Pressure and Palmar Galvanic Changes in Normal and Hypnotic States.* M. M. WHITE, University of Kentucky.

Suggestions of unpleasant ideational and sensory situations were given 18 subjects during normal and hypnotic states. Blood pressure changes were enhanced during hypnosis and galvanic changes diminished. In the normal states there was a slight positive relationship. Possible explanations were discussed.

*A Study of the Reactions to Experimentally Induced Frustration.* JULIAN B. ROTTER, Indiana University, and ELIOT H. RODNICK, Worcester State Hospital.

This study attempts to observe the reaction to frustration, in human adults, under controlled laboratory conditions. Analysis of the data considers the nature of the reactions, the individuality of the reactions, the specificity of the reaction, and the significance of these results in relation to the Yale "Frustration-Aggression Hypothesis."

*Reactions of Psychotics.* G. K. YACORZYNISKI and CLARENCE A. NEYMAN, Northwestern University Medical School.

Manics, schizophrenics, and controls differ in the amount of energy expended, the incompatibility between desire and action, the patterning of stimuli, and the choice of nonsymmetrical temporal patterns, on tests measuring perceptual, preferential, etc. responses. The classification of the two psychotic groups into introverts and extroverts is questioned.

*A Study of the Intelligence of Institutionalized Epileptics of the Idiopathic Type.* RHEA B. RUBISOFF, Jewish Vocational Service and Employment Center.

Findings on 66 epileptics are reported. The mean IQ of 75 is not significantly lower than that found for noninstitutionalized groups. An average drop of four IQ points was calculated from retests at intervals of 1 to 11 years. Frequent absence of deterioration was noted. A correlation of  $-0.28 \pm 0.07$  was found between frequency of seizures and IQ.

## SESSION C. PSYCHOMETRICS

HERBERT WOODROW, Chairman

*A Composite Curve for the Analysis of the Form of the Practice Function.*

E. P. HORNE, Beloit College.

The individual curves of eight college students' performance on 30 multiplication problems were combined into a composite curve. Slopes of curves in addition to the magnitude of the ordinate were used in plotting.

The methods of Vincent, Hunter, Kjerstad, Bills, Melton, Loucks, and Hilgard will be discussed.

*Quantitative Data on the Instability of the Means of Numerous Samples.*

E. L. CLARK, Northwestern University.

Mean of 761 samples of leaf lengths, word lengths, and heights, weights, and test scores of English sections were compared to test the

standard error formula. Heights only fulfilled theoretical expectations, while words and leaves showed over twice expected fluctuations. Unpredictable factors, not usually classified as chance, seemed to explain the unexpected fluctuation.

*A Rotational Method Based Upon the Mean Principal Axis of a Subgroup of Tests.* LEDYARD R. TUCKER, University of Chicago.

The normal to one of the hyperplanes of a simple structure was defined as the mean principal axis of the subgroup of tests which have approximately zero loadings on the corresponding factor. A quick method of locating the mean principal axis for a subgroup was presented, and the manner of selecting successive subgroups until a satisfactory one is obtained was discussed.

*Correlations Between 'Primary Mental Abilities' and Aviation Maintenance Courses.* WILLARD HARRELL, University of Illinois, and RICHARD FAUBION, Air Corps Technical Schools.

One hundred and five Air Corps Technical School students were given Thurstone's experimental battery of Primary Mental Ability Tests. Product-moment correlations between each of seven "primaries" and each of the five basic courses were calculated. Only Memory and Perceptual Ability failed to correlate significantly with at least one course.

*A Factorial Analysis of Measures of Mechanical Aptitude.* J. H. HAZELHURST, Northwestern University.

A factorial study was made of 46 paper-and-pencil tests and 5 criterion measures of mechanical job performance. The battery was given to 286 men training for work in the refrigeration and air-conditioning industry. Using Thurstone's method of analysis, 12 factors were isolated. The study indicates that current paper-and-pencil tests of mechanical aptitude are not related to job success; there may be group factors of motor skills along functional lines; there appear to be three primary factors of space perception; and there is evidence for a general factor of mechanical ability.

*A Factorial Study of the Components of Body-Build.* ROBERT S. WALDROP, Board of Education, Chicago.

Body-build has been described by Sheldon in terms of three major components based on 20 measures which were selected from a larger number by multiple correlation. This hypothesis has been examined by Thurstone's Centroid Method. The resulting centroid coördinates were rotated to yield test vectors.

*Reliability of Multiple Choice Measuring Instruments as a Function of the Spearman-Brown Formula. III.* H. H. REMMERS and EDWIN EWART, Purdue University.

An experiment with 808 university students divided into four equivalent groups yielded evidence in corroboration of the hypothesis that multiple choice attitude-measuring instruments increase in reliability with an increase in the number of alternative choices up to five. For seven or more alternatives the hypothesis is called in question.

## 1. SYMPOSIUM: CONTEMPORARY SOCIAL PROBLEMS

A. R. GILLILAND, Chairman

## 2. SYMPOSIUM: THE FIRST COURSE IN PSYCHOLOGY

WILLARD L. VALENTINE, Chairman

## 3. SYMPOSIUM: MOTIVATION AND TENSION

G. L. FREEMAN, Chairman

## SESSION A. HUMAN LEARNING

Saturday Afternoon, May 4

J. B. STROUD, Chairman

*A Comparison of Incidental and Purposeful Memory for Meaningful and Nonsense Material.* JOHN A. BROMER and HERBERT S. MEISEL, University of Wisconsin.

Incidental memory was compared with purposeful memory, under constant conditions, for meaningful prose and nonsense syllables. Results indicate that the relative efficiency of incidental memory varies directly with the meaningfulness of the material.

*A Comparison of Proactive and Retroactive Inhibition in Terms of Retention Scores and the Frequency of Overt Interlist Erroneous Intrusions.* ARTHUR W. MELTON, University of Missouri.

The first of two lists of synonymous adjectives learned in succession is recalled less well than the second list. Both lists suffer some inhibition. The frequency of intrusions is greater during the relearning of the first list. The results support a transfer theory of retroactive inhibition.

*Analysis of Individual Differences on the Basis of the Parameters of a Rational Learning Equation.* HAROLD GUETZKOW, University of Chicago.

A re-examination in mathematical notation was made of F. L. Wells' analysis of the relation of improvement of efficiency to practice. An exponential practice equation was derived from a set of postulates for the individual subject. The individual differences from data for 10 subjects were analyzed in terms of the parameters of the equation.

*The 'Conditioning' of the Blocking of the Alpha Rhythm of the Human Electroencephalogram.* JOHN R. KNOTT and C. E. HENRY, University of Iowa.

Delayed conditioned response of the blocking of the alpha rhythm has been observed with delays of five and nine seconds between introduction of CS and US. The CR is markedly influenced by "set."

*Some Factors in Time Estimation.* A. R. GILLILAND, Northwestern University.

Adults giving careful attention estimate time intervals without reference to blood pressure, heart, pulse changes, or subvocal counting. Counting becomes an aid with lessened attention. Counting with practice and knowledge of results reduces errors from 28% before practice to 7% after practice. Similar practice without counting produces small improvement.

*The Influence of a Wide Range in Intelligence on Intercorrelations Among Learning Abilities.* RICHARD WELLINGTON HUSBAND, University of Wisconsin.

Several previous studies, run on college groups, have shown very low intercorrelations among learning abilities. In this we tested pupils of junior high school age to get a wider range of abilities. The median of the 15 coefficients was +.10, which still leaves the conclusion that learning abilities are highly specific.

*The Effects of Three Different Ideational Elements Upon the Learning of a Patterned Motor Performance.* HERMAN F. BUEGEL, University of North Dakota.

Learning a patterned motor response with three ideational variations in the context showed that (1) ideational contexts result in a distinct advantage; (2) ideational contexts from the most advantageous to least are digits, unrelated letters, related letters; (3) rate of elimination of errors, as well as the fastest final performance, appears greatest in nonideational contexts.

*The Influence of Variable Time Intervals on Retention of Meaningful Material.* FRANKLIN O. SMITH, Montana State University.

Reproductions of material after various short time intervals were analyzed to discover the number of correct and partly correct reproductions, new and wrong ideas, and omissions after 1, 2, 4, 8, 16, and 32 minutes and 24 hours.

## SESSION B. GENETIC AND COMPARATIVE PSYCHOLOGY

CARLYLE JACOBSEN, Chairman

*The Present Social Status of a Group of Adults Who, When They Were in School, Were Judged To Be Dull in Mental Ability.* WARREN R. BALLER, University of Nebraska.

This study comprises a "follow-up" investigation of the postschool careers of 307 individuals who, when in school, were judged to be "dull" mentally. Parallel studies were made of persons of normal intelligence. Unfavorable social and economic adjustment is found for the dull group.

*Stages in Construction of Children's Drawings as Revealed Through a Recording Device.* EDWARD N. BARNHART, Cleveland Museum of Art.

By means of an apparatus which enables the experimenter to secure a record of the successive stages in the development of a child's drawing, the differences in compositional interests and in the process of constructing pictures between the schematic and visually realistic child are revealed.

*Measurement of Size of Vocabulary of Children From 6 to 18 Years of Age (School Grades 1 to 12).* MARY KATHERINE SMITH, Northwestern University.

Results from administering the Seashore-Eckerson English Recognition Vocabulary Test to children in each school grade from first through twelfth show a steady increase in number of words known. Size of vocabulary exceeds previous estimates.

*Problem-Solving in Monkeys and Children: Choice From Sample.* BEN WEINSTEIN, University of Wisconsin.

Two rhesus monkeys and two preschool children were trained to match a sample object from among a group of diverse stereometric objects. The sample object was varied in successive trials and was a replica of the reward object in any given trial. The symbolic processes involved are discussed briefly.

*Behavior of Green Monkeys in a Frustrating Social Situation.* JAMES H. ELDER and NORRIS NORDAHL, University of Wisconsin.

The behavior of green monkeys, trained to secure food by operating a releasing mechanism at a distant point in the experimental cage, is determined almost entirely by dominance status, when other subjects, similarly trained, are introduced into the situation. Complete withdrawal on monopolization is typical, with active competition occurring rarely and coöperation, never.

*Interference With Behavioral Development of the Incubating Chick by Oiling the Inner Shell Membrane.* R. F. BECKER, Northwestern University.

Oiling inner shell membranes of fertile eggs by Kuo's method on the third, fourth, seventh, eighth, and eleventh days to observe fetal development led to asphyxia within five days. Cyanosis and death of the fetuses often occurred within two days. Only normal, unopened controls hatched.

*An Analysis of "Life's" "Ablest Congressman" Poll.* HILDING B. CARLSON and WILLARD HARRELL, University of Illinois.

*Life* recently published composite rankings by 53 newspaper correspondents of the "ablest" congressman, in terms of integrity, intelligence, industry, influence, and average of these four, and a point ranking. Three centroid factors account for the intercorrelations of these six variables, which, when rotated, give factors tentatively named intellectual fortitude, industry or "push," and popularity. Similar matrices were obtained for

senators and representatives. The results suggest a redefinition of the traits rated.

*A Comparison Between Self-estimated and Measured Vocational Interests.*  
RALPH BEDELL, University of Nebraska.

Neither self-estimated nor measured vocational interests of 141 Teachers College freshmen women are concentrated in teaching. Correlations between self-estimates and measurements vary from -.04 to .54. Many self-estimates are more closely related to a measured vocational interest not estimated than to the one estimated.

*The Incidence of Maier-Type Neuroses in Emotional and Nonemotional Strains of Rats.* RICHARD F. MARTIN, Western Reserve University.

Animals of the two strains were placed in an open field situation and stimulated for two minutes by a hissing sound. More of the nonemotional strain displayed severe neurotic attacks than did the emotional rats. These results will be compared with results obtained in a discrimination conflict situation.

*The Relationship Between Emotionality and Various Other Forms of Behavior in the Rat.* FRED Y. BILLINGSLEA, Western Reserve University.

Two groups of rats representing emotional and nonemotional strains were tested for wildness-savageness, activity, problem-solving, aggressiveness, and neurotic behavior. Interpretation of the resulting intercorrelations will be made on the basis of how these different forms of behavior tend to group themselves so as to individualize the rat.

### SESSION C. PERSONALITY

PAUL R. FARNSWORTH, Chairman

*Analysis of the J-Curve Hypothesis.* E. T. KATSOFF and ALLEN HOWARD, Northwestern University.

A critical statistical analysis of the J-Curve Hypothesis was made to determine if it really differs qualitatively from the curve of normal probability. Manipulation of the step interval made it possible to change J into normal curves and normal into J-Curves. A reworking of the J-Curve data showed the phenomena to be a function of the step interval employed.

*A Study of 'Unconscious' Self-Judgment.* C. WILLIAM HUNTLEY, Western Reserve University.

When an individual judges his own forms of expression (voice, hands, etc.) without knowing that they are his, two striking results obtain. There is, first, a low incidence of self-recognition. Second, the self-judgments that are made without 'conscious' recognition are preponderantly favorable, seldom neutral, and occasionally extremely unfavorable.

*Parent Behavior as Related to Child Development: II. Social Maturity.*  
 MARY FRANCES HARTSON and HORACE CHAMPNEY, Samuel S.  
 Fels Research Institute.

The scores of about 40 Fels children on the Joël Behavior Maturity Scale were correlated with ratings on 30 variables of the Fels Parent Behavior Rating Scales. The results suggest that a well-adjusted, democratic, sociable, rational, understanding, moderately unrestrictive home is conducive to accelerated social maturity in the child.

*A Short Form of the Terman-Miles Masculinity-Femininity Test.*  
 MAURICE P. BECK, Western Reserve University.

Seventy-seven items were abstracted from the complete M-F test. The scores obtained from the short form correlated highly enough with the total test to justify its use in making group comparisons.

*The Pressey Interest-Attitude Test as a Measure of Personality at the College Level.* RAYMOND G. KUHLEN, Ohio State University.

Analysis of freshman-senior follow-up data (97 cases) and correlation of test scores for 173 girls with average emotional maturity ratings by sorority sisters indicate usefulness of the test as a descriptive measure of personality at college level, but throw doubt on its validity at that level as an emotional maturity measure.

*The Measurement of the Behavior of Kindergarten Children in Relation to the Teacher's Dominative and Socially Integrative Contacts.*  
 HELEN M. BREWER and H. H. ANDERSON, University of Illinois.

Reliable observational techniques were devised for recording the interplay of kindergarten children and teachers. Children's behavior in seven categories was recorded in amount of time spent in each activity. Teachers' contacts were recorded as dominative or as socially integrative. Subjects were 32 children and 2 teachers.

### 1. SYMPOSIUM: MENTAL HYGIENE

C. M. LOUTTIT, Chairman

### 2. SYMPOSIUM: LABORATORY REPORTS

JOHN A. McGEOCH, Chairman

### ANNUAL DINNER

Saturday Evening, May 4

E. S. CONKLIN, Toastmaster

*Address of Welcome:* EMERY T. FILBEY, Vice-President, University of Chicago.

*Presidential Address:* J. P. GUILFORD, University of Nebraska.

Subject: "Human Abilities"

THE WENTWENTH ANNUAL MEETING  
MEETING OF THE WESTERN PSYCHO-  
LOGICAL ASSOCIATION

RALPH H. GUNDLACH, SECRETARY-TREASURER,  
UNIVERSITY OF WASHINGTON

The 1940 meetings were held June 14 and 15 in the new Psychology Building at the University of California at Los Angeles. A total of 174 persons registered, and 37 papers were presented.

On the day preceding the meetings many of the members were pleased to attend the ceremonies celebrating the occupation of the new building. Addresses were made by R. B. Loucks, E. R. Hilgard, Milton Metfessel, and G. M. Stratton on this occasion.

At the business meeting positive action was taken on two items. A resolution calling for the support of the "American Standard" Work and Assistance Act, H. R. 8615, having to do with relief appropriations for professional workers, was passed. A motion of Knight Dunlap that a committee be appointed to investigate what functions psychologists should fulfill in national military organizations in times of peace and war in the interests of national defense evoked considerable discussion. It was finally passed, amended to read that the task had to do also with the preservation of peace, and with the understanding that this act did not assume that our participation in the war is inevitable. The motion also authorized the committee to advise, consult, and coöperate with the American Psychological Association, the National Research Council, and other organizations as may be necessary for the development and effectuation of plans. The committee includes: Dunlap, Hilgard, and Metfessel, Chairman.

The treasurer reported, as of February 15, 1940, that in the preceding year expenditures exceeded income by about \$51, leaving a balance of about \$75 to start the current year.

Officers elected for the coming year were: President: Mary B. Eyre, Scripps College; Vice-President: Roger B. Loucks, University of Washington. The Association is scheduled to meet next year at the University of California, Berkeley.

Retiring President Howard R. Taylor addressed the assembly

after the annual banquet on the topic: "Dimensions of Scholastic Aptitude." Following the last paper on Saturday, a symposium was held which was attended by about 140 persons. The topic was: "Should Departments of Psychology Have a Service Function in the College Personnel and Mental Hygiene Program?" Invited speakers included Dorothy Baruch, Milton Metfessel, Robert T. Ross, Ruth Tolman, and Walter C. Varnum.

Abstracts for the program are listed alphabetically by author.

## PROGRAM

*Therapeutic Procedures as Part of the Educative Process.* DOROTHY W. BARUCH, Broadoaks School of Education, Whittier College.

This exploratory study deals with 111 children in attendance September, 1938, to June, 1940, in the Nursery School and Kindergarten groups at Broadoaks School. Examination of their histories revealed that they had, prior to entrance, been subjected to a variety of stresses.

The matter of early therapy within the school situation is then explored. Observational records and case-history data are cited showing (a) how therapeutic procedures were incorporated as part of the educative process and (b) how movement in personality adjustment accompanied such procedures. Various types of therapy are analyzed.

*A Preliminary Study of Persistence and Ability.* ARTHUR K. BRINTNALL, University of California at Los Angeles.

A 19-unit stylus T-maze which had no solution was used to measure the persistence of 20 subjects. The amount of time spent on the maze before giving up was taken as the measure of persistence.

The subjects were then tested on two 11-unit mazes which had solutions. The number of trials necessary for learning was taken as a measure of maze learning ability.

The rank difference correlation between 'persistence' and 'ability' was +.314.

When the subjects were divided into two groups on the basis of whether they took more or less than the average number of trials to learn the two test mazes, it was found that the subjects below the average (best maze learners) averaged 8.88 minutes on the no-solution maze. The subjects who were above average in number of trials necessary for learning (the poor learners) averaged 4.14 minutes on the no-solution maze.

The results are indicative of a possible relationship between 'persistence' and 'ability.'

*A Random Sample of Estimated Sizes and Their Relation to Corresponding Size Measurements.* EGON BRUNSWIK, University of California.

A subject was asked to give intuitive as well as critical estimates—each in different attitudes—of the extension of an object most conspicuous

to him at the moment. The conditions included indoor and outdoor situations representative of the activities pursued during a normal day. The material comprises a total of 180 of such situations. Objective measurements of the objects as well as of their distances from the eye were also obtained, showing approximately normal distributions. Almost perfect correlations between measured and estimated sizes were found, indicating the presence of perceptual size-constancy in an unbiased sample of "natural" test situations.

*Clinical Studies of Mother-Child Relationships.* CHARLOTTE BÜHLER.

Mother-child relationships were studied in using 113 clinical cases, age 1 to 23, in which the author knew intimately mother as well as child. Five behavior items are picked out for the study: the *degree of emotional contact* which the mother established with her child, the *handling and understanding* of the child, the *expectations* which the mother has in regard to the child, the *demands* which she makes on the child, her own *balanced* or *unbalanced* behavior. Three or four degrees are discriminated and established on the basis of either utterances or objective behavior observations.

High correlations hold between contact and handling (+.80) and also between expectations and demands (+.57). There are correlations between the mothers' extreme behavior and the unadjusted children.

Mothers who make very high demands and are very ambitious influence the child less adversely than mothers who do not care at all or who are inconsistent in their demands.

*Therapeutic Methods in Stuttering and Stammering.* HARRY W. CASE,  
University of California at Los Angeles.

An important aspect of the problem of stuttering and stammering is the consideration of methods of alleviating the disorder. As the result of case studies and experimentation it appeared that the readjustment of the individual to his social environment is necessary in almost all cases to eliminate stammering, but is seldom sufficient. Negative practice (controlled practice of the patient's particular type of stammering) was found to be an effective means of breaking the stammering habit and to be especially effective if carried on after or during social readjustment. The two common forms of stammering, stuttering and speech blocking, were found to respond best when the treatments were differentiated, a specific routine of therapy being worked out for each of the two forms.

*The Influence of Diseases on Psychological Efficiency.* HULSEY CASON,  
University of Wisconsin.

A theoretical study was made of the influence of several important medical diseases on intelligence and learning efficiency. The principal diseases studied were tuberculosis, respiratory disorders, malarial fever, syphilis, rheumatism, chorea, meningitis, encephalitis, cardiovascular disorders, diseases of the blood, intestinal parasites, deficiency diseases, tumors, and disorders of peripheral nerves. There are relatively few published results on the psychological influence of several of these conditions, and in several cases we have drawn conclusions indirectly on the

basis of the symptoms, course, and prognosis of the disease. It would be relatively easy to carry out a number of straightforward and controlled studies in this field.

*Some Aspects of the Behavior of Lions in Captivity.* JOSEPH B. COOPER,  
University of California at Los Angeles.

An exploratory study of African lions at the Gay Lion Farm at El Monte, California, has been made. This investigation has been of the observational type and has aimed at discovering the nature of the general behavior repertory of lions. This undertaking consisted in setting up eight arbitrary categories of behavior: (1) activities preliminary to, and following, feeding; (2) training; (3) vocalization; (4) adult play; (5) adult fighting; (6) sex activities; (7) gestation, parturition, and infant care; and (8) characteristics of the lion cub. The observations and subsequent descriptions were made in accordance with these categories. Some of these findings will be described.

*Uncontrolled Path Elimination and the Delayed Response in Rats.* C. W. CRANNELL, University of California.

Rats were required to select in an uncontrolled sequence each of four paths once only in a daily set of four runs. Successful solution was preceded (rather than accompanied) by an increase in hesitation time at the choice point, and none of the rats developed a stereotyped sequence of path elimination. Rats are able to select the correct remaining path when one to four hours elapse between the third and final runs. After solving a four-path problem, a five-path problem is easily mastered.

The complex relationship of hesitation time to correctness of choice, the almost total absence of stereotypy of solution, and the maintenance of the solution in spite of the introduction of long delays suggest the need for a topological interpretation.

*Stereotypes and Their Significance.* FRANK C. DAVIS, University of California at Los Angeles.

Students in elementary general psychology were requested to make judgments concerning the probable authorship of selected quotations. One of the quotations was to the effect that individual enterprise is a thing of the past. The second was an indictment of the Dies Committee for the manner in which its hearings have been conducted. The third emphasized the necessity for "growing" men in the same careful and attentive manner that "a gardener grows a favorite fruit tree." Stereotypy characterized the responses of these students to the first and third quotations, but (in October, 1939, at least, when the judgments were collected) there was little evidence of a similar tendency in the case of the second. Studies of this sort should be made in order to determine what the facts are; to inquire under what circumstances stereotypy in the judgments of intelligent, literate persons would be predicted; and to raise the question what might be done to correct a condition which, in democracies, negates the principles on which effective citizenship is predicated.

*Methods of Evaluating the Efficiency of Door-to-Door Salesmen of Bakery Products.* ROY M. DORCUS, University of California at Los Angeles.

The conventional techniques of evaluating salesmen are discussed in relation to the general problem of door-to-door selling. Information is presented which shows that the ordinary criteria of volume of business and rating by superiors is unsatisfactory for evaluating door-to-door salesmen unless a detailed analysis of the route on which the salesman works is available. Up to this time no standard method for evaluating individual routes has been worked out. The author presents a technique for the analysis of the territory involved, which, in turn, supplies the necessary data for determining the efficiency of the man.

*The Quarters for Psychology at the University of California at Los Angeles.* KNIGHT DUNLAP, University of California at Los Angeles.

A description of the arrangement of the 73 rooms available in the psychology wing of the life science building for office space, instruction, research, and general purposes, with explanation of the basic unit planning, and the design of the building to fit the needs of the departmental work. Slides of the floor plans of the several floors will be shown.

*Sensory Conditioning.* DOUGLAS G. ELLSON, Stanford University.

Thirty subjects were given 60 paired trials in which a light (CS) preceded a 1000-cycle tone (UCS). The onset and decline of the tone were gradual. It reached a supra-threshold strength about two to six seconds after the onset of the CS and remained above threshold for a similar period. The subjects pressed a key to indicate when they heard the tone. Following this training, 10 reinforced test trials were given in which 30 seconds elapsed between the onset of the light and that of the tone. Twenty-three subjects gave one or more conditioned (hallucinatory) responses during these test periods.

Controls of 60 and 90 subjects, respectively, indicated (1) that the hallucinations were not due to suggestion in the instructions, and (2) that, while the reinforcement of the test trials alone produced significant conditioning, this was significantly increased by training.

*The Effect of Changes in Vitamin A Content in Diet Upon Recovery From Glare Blindness.* LLOYD B. FISK, HAROLD TORKELSON, and C. W. BROWN, University of California.

Glare blindness was produced by exposing the eyes to a bright light. Recovery from glare was measured by determining the time needed by the individual to perceive the direction of a small arrow under conditions of low illumination after he had been exposed to the bright light. Recovery times were obtained for individuals whose diet was radically varied in vitamin A content. The vitamin A deficient diet resulted in longer recovery time.

*A Study of Consonant Preferences.* BERTRAM R. FORER, University of California at Los Angeles.

Nineteen consonantal phonemes, worked into nonsense words, were ranked according to preference by a group of college students. To discover possible determinants of such preferences the preference ranks were correlated with ranks obtained from independent analyses by other criteria. A correlation of +.58 was obtained between degree of preference and relative frequency of occurrence of the phonemes in English. Indices of effort in pronunciation such as articulability, power of the sounds, and duration of the sounds in general speech show negligible relationships to preference. Ranks of several consonant groups in order of decreasing preference are: rolled (r,l), nasals (m,n), spirants (s,sh,z,v,f), semivowels (w,y), stops (b,p,k,g,t,d), and affricates (ch,j).

*Reliability and Meaning of Ratings of Motivational Patterns.* ELSE FRENKEL-BRUNSWIK, Institute of Child Welfare, University of California.

Nine basic motivational tendencies, such as drive for social ties, for recognition, for aggression, were rated for 70 subjects in the University of California Adolescent Study by three adult judges acquainted with the subjects' personalities through a number of years. Most of the ratings are sufficiently consistent from judge to judge. The influence of the personality of the judge upon the ratings is also discussed. Intercorrelations between the ratings of different tendencies are computed for each judge. Correlations with ratings of actually achieved social status and with some other materials throw further light upon the meaning of these ratings.

*Does the Nerve Impulse Have an External Field?* J. A. GENGRELLI, A. H. WARNER, H. SJARDEMA, University of California at Los Angeles and Cedars of Lebanon Hospital.

Since the nerve impulse is a moving zone of negative potential, it should create an electrical flux in the immediate region of space surrounding it.

Using a very small tauroidal coil and a string galvanometer, tests were made first on the Lillie Iron Wire Model. It was demonstrated that the advancing wave of depolarization is accompanied by an electrostatic field. The induced potential was of the order of 1-15  $\mu$ v.

No results could be obtained when a frog's sciatic nerve was used. The failure was attributed to insufficient sensitivity of the coil. At present a much better coil is being constructed.

*Final Goal vs. Sub-Goal Distance Discrimination.* H. C. GILHOUSEN, University of California at Los Angeles.

Accepting Yoshioka's ratio of 1.14:1 as the threshold for distance discrimination in the rat, a maze was constructed whose short-path long-path ratio was 1:1.55 to a common juncture, or sub-goal. From the juncture a final common path extended to the final goal (food box). The ratio of paths to the final goal from the start was slightly under the discriminatory value for distance, *i.e.* 1.14:1.

If animals choose the short path, this objectively defines a sub-goal. Results of a group run in the maze described above are compared with results of a control group run to the common juncture and fed there. For the control group the ratio of long path to short path to the juncture is 1.14:1. The control group acts as a check on the threshold value for the maze and method employed.

*Theory of Imagination in the Iliad and Odyssey.* KATE GORDON, University of California at Los Angeles.

We do not expect of Homer a textbook in psychology, yet we may properly look for evidence in the epics that he noted a mind-body distinction and that he discriminated certain of those performances which we discuss to this day as subject matter of psychology. Among these activities are sensing, thinking, remembering, desiring, deliberating, planning, dreaming, counselling, promising, and symbolizing. The evidences to be mentioned here can be listed under the heads: vocabulary, language structure, concepts of law in human behavior, institutions, special descriptions of dreams, examples of mental debate and soliloquy, the poet's view of poets, the example of the faithful Eumaeus, and the portrait of "the inventive man" Odysseus.

*The Psychology of Nationalism as a Major Factor for War.* RALPH H. GUNDLACH, University of Washington.

People who fight modern wars have had little personal contact with their enemies. They fight, stirred by words of Patriotic Nationalism, which exploits the irrational training of family and church.

Nationalism involves: (1) *identification* with the State, hence *ego-expansion*; (2) *destructive action* as a substitute for problem solving; (3) *oversimplification, personalizing*, and *moralizing* the conflict into Good vs. Evil; (4) *rationalization (repression and projection)*; (5) shift of responsibility for violence; (6) *transfer* of fear and hate to pacifists, communists, labor leaders, *et al.*

Wars are institutionalized aspects of modern economic and political state system. Source of conflict between states is rivalry for rights to exploit natural resources and persons. Military might is the ultimate resort beyond diplomacy. The strategy of war is at first a *means* to protect and extend economic privileges, but at times becomes an end in itself.

*Epileptiform Convulsions in Rats.* JANE R. HAMILTON, University of California. (Introduced by C. W. Brown.)

Convulsive seizures have been observed to occur spontaneously in rats. These seizures show a striking similarity to epileptiform attacks in humans, presenting well-defined tonic, clonic, and comatose stages. The paper will present a comparison of epileptiform behavior as observed in rats with the clinical picture reported in humans.

*Extinction of the Avoidance Behavior of Rats to Strange Objects.*

BRADFORD B. HUDSON, University of California. (Introduced by C. W. Brown and Warner Brown.)

Rats react with avoidance responses to strange objects that are placed in their normal cage environment. These avoidance responses are characterized by cautious approaches toward, and withdrawals from, the object and by the pushing of sawdust in its direction. The procedure followed in this experiment was to introduce into their living cage a small black-and-white striped pattern as the strange object. Daily five-minute test trials result in extinction.

Extinction of this behavior toward the pattern may be accomplished, however, by the introduction of a series of other unfamiliar objects (e.g. light bulb, ink bottle, etc.) into the cage. Or the avoidance behavior may be prevented from appearing by the introduction of these objects prior to the first presentation of the pattern.

*The Modal T-Score.* DONCASTER G. HUMM, Los Angeles.

The chief problem met in the determination of relationship between sets of data collected in psychological testing is the problem of skewed data which have curvilinear relationships when arranged in scatterfields.

When skew is the principal cause of curvilinearity, a solution of the difficulty may be effected (as far as has been determined experimentally by this writer) by: (a) dividing each set of data at the mode; (b) determining the standard deviation of the portion of the distribution lying above the mode separately from the portion lying below the mode ( $\sigma_u$  and  $\sigma_l$ ) and finding separate Z-scores ( $\frac{d_u}{\sigma_u}$  and  $\frac{d_l}{\sigma_l}$  from mode); and setting up modal T-scores by the formula  $MoT = 50 + 10Z$ .

*Some Crucial Aspects of the Problem of Sex Differences.* JEAN McQUEEN IRWIN, Junior Counseling Service, Oakland.

Survey of existing data on sex differences reveals that, although the number of differences is probably minimal in comparison with the antitheses which are popularly assumed, differences in several specific areas may be of special importance for the understanding of some of the related educational, economic, social, marital, and general personality problems.

Analysis of the evidence for alleged differences in (1) physiological rhythm and response, (2) intellectual capacity, (3) emotional sensitivity, (4) interests and attitudes, and (5) motivation suggests that the locus of significant variation rests in the latter area, and that such motivational differences may be dependent partly upon differences in physiological rhythm and response and partly upon the presence of bifurcated cultural spheres of influence.

*Behavior Maturity of High School and Junior College Students.*  
WALTHER JOËL, Los Angeles City College.

Behavior Maturity has been defined by the writer as grown-up-ness, the opposite of childishness, or, more specifically, as the relative degree of independence, self-control, and social attitude reached.

A "Behavior Maturity Blank" was devised which, after preliminary experimentation and the elimination of doubtful items, consists of 68 questions to be answered "Yes" or "No."

The results from 535 Junior College students indicate no correlation with Otis Intelligence, and no correlation with the Bell Adjustment Inventory or any of its subscores. Statistically significant differences between averages are found between males and females, between Junior High School ( $N=479$ ) and Senior High School ( $N=398$ ), and between Senior High School and Junior College students.

*Some Common Errors in the Use of the Critical Ratio.* JANE LOEVINGER,  
University of California. (Introduced by E. C. Tolman.)

The "critical ratio" is, under some conditions, a special case of Fisher's "t-test." Under any other conditions it cannot be interpreted in terms of probability and is virtually meaningless. The conditions for the interpretation of a critical ratio in terms of probability relate to the sampling, the populations sampled, and the hypothesis tested. The hypothesis tested is always "Student's hypothesis" that the difference between the two means is zero. The level of significance corresponds to the probability of rejecting the hypothesis when true. It is never correct to interpret the level of significance as giving the probability that a real difference exists in the populations. Usually no mention is made of the power of the test—that is, the probability of detecting a difference of a given size if it really exists.

*The Influence of Metrazol Upon Maze Behavior.* ROBERT D. LOKEN,  
University of California at Los Angeles.

The experiment now to be considered was carried out upon matched groups of white rats divided into control and experimental groups, 10 animals in each group. Both groups were taught a relatively simple maze pattern during a 10-day training period, running two trials each day. At the end of the 20 training runs the animals were divided into two groups, matched as to performance. The experimental group was then given a series of three injections of metrazol, spread over a week. The control group was given a similar series of injections, but of normal saline solution. The animals were then rerun in the maze situation to determine if any differences in 'forgetting' or 'loss of learning' had resulted from the injections. Metrazol, and/or the resulting convulsions, does result in marked learning losses.

*Criteria of the Ease and Extent of Conditioning.* ARTHUR A. LUMSDANE,  
Stanford University. (Introduced by E. R. Hilgard.)

Using records of 209 subjects from a number of previous studies, an investigation was made of individual differences in the ease of establish-

ing conditioned eyelid responses in man. The data were obtained under comparable, but not identical, experimental conditions. Comparisons are presented which indicate that disparities in the extent of conditioning reported by various investigators can be accounted for in terms of unequal sensitivities of the recording devices used. Nearly all individuals show a considerable degree of conditioning before the end of 50 trials, even though some subjects give few or no conditioned responses in the early trials.

*Public Opinion, Expert Opinion, and Collective Thinking.* NORMAN C. MEIER, University of Iowa.

A weakness of public opinion polls is that poll-data include opinions based on paucity of factual information. On selected social and economic questions the poll reflects feature writers', columnists', and radiators' viewpoints merged with established bias and prejudice. When expert opinion is sought, the yield of significant data is higher, but limited by (a) tendency of experts to disagree among themselves, (b) reluctance of the expert to commit himself, and (c) inability to accept categoric questions without multiform provisos. Organized collective thinking (Policy Committees, Round Tables, Symposia) is not necessarily free from bias.

An experiment proposes features designed to reduce objections outlined, through rating procedures to determine degree of competence, bias, and special access to source data, and through effecting a continuing process of ideation.

*Conditioned Eyelid Responses to Serial Stimulation.* JOSEPH MILLER, Stanford University.

Human subjects were conditioned to four successive flashes of light, the last followed by an air-puff to the cornea. On the next day they were tested for magnitude of conditioned response with various light combinations. Analysis of the magnitudes of response to the four light stimuli shows: (1) a positively accelerated gradient of increasing response to the four stimuli as reinforcement is approached; (2) that this gradient becomes more steeply accelerated as conditioning proceeds, with increasing differences between the response in the interval just preceding the puff and those in the earlier intervals; (3) that the process appears as one of early generalization followed by discrimination. The magnitude of response to the last light continuously increases while the others decline after an earlier rise; (4) that tests indicate that the magnitude differences can be explained as due both to the accumulation of "stimulus traces" in the later intervals and to a temporal or successive order gradient of reinforcement.

*Preliminary Studies of Emotional Behavior.* JOSEPH E. MORSH, University of British Columbia.

Behavior of students in a university located in a country at war throws emphasis upon the study of problems concerning the emotions. Preliminary investigations of anger, fear, and a study making use of the emotional diary have been undertaken. The study of anger involved the

use of high school students. No appreciable sex differences in the number of anger situations have so far been indicated, but the type of situation which aroused anger showed considerable variation. The younger subjects and those who were only children tend to show the greatest number of anger responses. The value of these studies as indicators is suggested. These investigations are being continued, using greater numbers of subjects.

*The Influences of Reversing the Relevant Cues in a Human Discrimination Problem Upon the Speed of Learning.* DORIAN ROSE, University of California. (Introduced by E. C. Tolman.)

The apparatus used in this experiment consisted of a square bakelite punchboard; a stylus could be inserted into the holes by the subject and the path traced was automatically recorded. The problem consisted in differentiating two outlines which were traced upon the board by the subject. They were asked three times on each outline to give the number of the pattern which they thought they were following. The outlines were identical, but they could be told apart by observing the spatio-temporal patterns formed by the places of interruption. The control group learned to discriminate with no reversal of cues; two experimental groups had the cues reversed in the presolution period; two more experimental groups had the cues reversed in the solution period. Expressed and behavioral hypotheses, hesitation time, and speed of learning were studied.

*The Generality of Level of Aspiration as Measured by a New Technique.* M. BREWSTER SMITH, Stanford University.

In a "learning experiment under free conditions of practice," subjects were allowed with certain restrictions to choose any of nine marked distances from which to practice throwing darts or quoits. Fore- and after-tests yielded performance scores, while the average chosen distance on each task furnished measures of level of aspiration.

In determining generality by means of inter-task correlations, a partial correlation formula was used which gave results independent of performance on fore- and after-tests. A frame of reference interpretation is suggested to account for certain equivalences of the physically dissimilar scales of distance-difficulty for the two tasks.

*Test Performance of Mixed Races Compared With That of Parent Stocks.* STEVENSON SMITH, University of Washington.

Both in 1924 and in 1938 in nonverbal tests the mean of the Chinese-Hawaiian and White-Hawaiian mixtures fell midway between the mean of the parent stocks. These mixed races' means deviated somewhat toward the upper scoring parent stock in language tests. The variability of the mixed races was in all cases less than mathematical expectation.

*Vicarious Trial and Error in a Human Discrimination Experiment.* EDWARD C. TOLMAN, University of California.

This was an investigation of vicarious trial and error (VTE) in human beings. The subjects were required to judge the relative numbers

of dots on the two sides of each of a series of cards. Since the two stimulus-objects to be compared were always on opposite sides of one and the same card, a record of the amount of vicarious trial and error, *i.e.* of looking back and forth from one side of the card to the other, prior to each discrimination judgment was easily obtained. The two main findings were: (1) the greater the shock to be expected from a wrong judgment, the more the VTE's; and (2) the more difficult the discrimination, the more the VTE's. The first finding agrees with those obtained from rats. The second contradicts those obtained from rats. Explanations for both the agreement and the disagreement are suggested.

*A Study of the Emotional Instability in Elementary School Students in Grades Four to Eight.* EDITH TURNER and MARY B. EYRE, Scripps College and Claremont Colleges.

This study deals with emotional instability as found in 1400 children ranging in age from 8 to 18 years, in two public schools, Grades four to nine. Grade distribution was: fourth, 88; fifth, 112; sixth, 109; seventh, 382; eighth, 392; ninth, 299. Increased number in seventh and eighth grades is due to inclusion of these grades in both schools.

The criterion used was the Westenhaver revision of the Mathews and Murray tests for emotional stability.

Trends indicated by the results: (1) the child over-aged for his grade tends to be emotionally unstable; (2) the unstable child has a lower intelligence quotient; (3) instability of boys decreases with grade placement while instability of girls increases with grade placement from fourth to ninth grade.

*Composite Faculty Judgment as a Predictive Factor in Guidance.* C. C. UPSHALL, Western Washington College of Education.

(1) Each faculty member was asked to select one student for each 15 in his class who, in his opinion, would be least desirable as an elementary school teacher.

(2) The study was based on 143 students who had been mentioned as least desirable three or more times.

(3) The difference between the "mentioned" group and a representative sampling of students was at least three times the standard error of the difference for scholarship, college aptitude, and student teaching. The difference in field ratings was almost statistically significant.

(4) More men than women were mentioned as least desirable, but more of the men who were mentioned have been able to receive and hold positions.

(5) This method of identifying students who will be the least desirable teachers has been proved by the study to be highly effective.

*Some Personality Differences Between "Terminal" and "University" Students.* WALTER C. VARNUM, Los Angeles City College.

This paper constitutes a preliminary report on some findings from personality tests administered to groups of "terminal" (semiprofessional) and "university" (certificate) students at City College. Comparisons

will be offered on the results of the following tests: (a) Allport and Vernon, Social Values Study; (b) Wrenn, Study Habits Inventory; (c) Otis, Intelligence Test; (d) The California Test of Personality.

Results thus far obtained seem to justify the opinion that a "terminal" student represents a distinctive personality profile, especially in the field of interests and values which accounts for his status and which may be significant in directing him toward an appropriate adjustment in his personal as well as vocational life. Only a very few outstanding results will be presented, and these will be offered in the form of large-scale graphs.

## A CRITICAL REVIEW OF INVESTIGATIONS EMPLOYING THE ALLPORT-VERNON *STUDY OF VALUES* AND OTHER TESTS OF EVALUATIVE ATTITUDE

BY ELIZABETH DUFFY

*Woman's College of the University of North Carolina*

In 1928, Eduard Spranger's (17) *Lebensformen* was translated into English, and psychologists in this country became interested in his thesis that the personalities of men are most clearly revealed in their evaluative attitudes or values. These he classified into six types: (1) the *theoretical*, or interest in the discovery of truth; (2) the *economic*, or interest in the useful; (3) the *aesthetic*, or interest in form and harmony; (4) the *social*, or interest in, and love of, people; (5) the *political*, or interest in power; and (6) the *religious*, or desire for comprehension of, and unity with, the cosmos as a whole.<sup>1</sup> In 1931, G. W. Allport and P. E. Vernon (1) published a test, *A Study of Values*, which was based upon Spranger's classification of types and was designed to put to empirical test the conclusions which Spranger had reached by rational analysis. This test has received wide use and has stimulated the construction, and provided a large part of the material, of several new tests based upon the Spranger classification. The present review will summarize, and present interpretative comments upon, a number of studies in which the Allport-Vernon test, or other tests of evaluative attitude, have been employed. Since Cantril and Allport (3), in 1933, published a comprehensive review of investigations making use of the *Study of Values*, the present review will cover only studies published subsequent to that time.<sup>2</sup> In the Cantril and Allport article may be found

<sup>1</sup> Much confusion has resulted from the use of the terms "economic" and "political" in a sense somewhat different from their usual meaning. This confusion has crept into the construction of certain of the tests based upon this classification and into the interpretation of test results. Thus, one investigator interprets a low political score to mean "political apathy" rather than, more properly, a lack of interest in power and prestige.

<sup>2</sup> It is unlikely that the writer has succeeded in locating every study in which a test of evaluative attitude has been employed, since, in many of these studies, the major emphasis was upon some aspect of the investigation other than that of evaluative attitude, and the study has, therefore, been indexed under some other heading.

a discussion of norms, reliability, validity, sex differences, occupational and institutional differences, and agreement with other tests. These writers conclude that "the reliability and validity originally claimed for it [the test] are approximately correct—if anything too low"; that "the weakest feature of the scale is the low reliability of scores for the social value"; that "the test is uniformly successful in distinguishing the basic interests of contrasting occupational groups and that it discloses distinctive patterns of interest in different collegiate groups"; that "the evidence from recent applications of the *Study of Values* must be interpreted as establishing these values (with the exception of the social) as self-consistent, pervasive, enduring, and above all, *generalized traits of personality*" (p. 272).

#### NORMS, CONSTANCY OF VALUES, SEX DIFFERENCES

Harris (7), testing 338 Lehigh University students, reports norms closely approximating those reported for males by Cantril and Allport (3), except for the *religious* value, where the Lehigh mean is somewhat lower. The *social* and *economic* values were not studied because a three-weeks retest of two groups of 25 subjects yielded low correlations. Harris reports that the various student age groups, ranging from 16 years to 23 years and over, showed no consistent difference in values, except perhaps a slight tendency for the youngest age group to be somewhat more religious. Inspection of his table reveals, however, that there is greater *theoretical* interest among those 23 years and over, and less *political* interest among the youngest and the oldest of his six age groups (p. 96). Whether these differences are statistically reliable cannot be determined from the table.

Schaefer (15), administering the *Study of Values* to 72 sophomores and 70 seniors at Reed College, finds a trend toward increased *theoretic* and *aesthetic* values in the senior as compared with the sophomore year. The Reed College norms for the *theoretical* and *aesthetic* values are somewhat higher than those for the college populations reported by Cantril and Allport. Schaefer explains this as being due to the fact that the college emphasizes scholarship and nonvocational subjects.

Whitely (21), giving the test to 84 Franklin and Marshall College students each fall during their four years at college, finds that there is a "relatively high degree of constancy of the mean scores for the successive administrations of the test. For the total group, there is a slight tendency for the aesthetic scores to increase from the freshman to the junior year, while the religious scores decrease slightly. The coefficients of correlation between the various administrations indicate that the values are fairly stable. The coefficients for the religious and aesthetic values are highest, and those for the social value lowest" (p. 406).<sup>3</sup> Inspection of Whitely's

<sup>3</sup> The high reliability of the religious and aesthetic values and the low reliability of the social value confirm the conclusions reported by Cantril and Allport (3, p. 261).

table shows that the coefficients of correlation range from .38 to .78. If the social value is omitted, we find two coefficients of the order of .4, six of .5, nine of .6, and thirteen of .7. When it is considered that some of these comparisons are of tests taken four years apart, and that the four years included are those of the college period, when values might be expected to shift more rapidly than during most periods of life, the somewhat low coefficients of correlation between the various administrations of the test may be taken to reflect, not the unreliability of the test, but the shifting of the students' values, as brought about in part by their college training. Considered from this point of view, it is interesting to note that the lowest coefficients of correlation are found always between the first and other administrations of the test, and that the trend (perhaps not statistically significant) is toward an increase in *aesthetic, social, and theoretical* values, and a decrease in *religious, political, and economic* values.)

Duffy and Crissy (4) obtained scores on the *Study of Values* for 108 freshmen entering Sarah Lawrence College. They report that this group, made up chiefly of individuals from wealthy and socially prominent families, has much higher *political* value scores, slightly higher scores for the *aesthetic* value, slightly lower *economic* and *social* value scores, and much lower *religious* and *theoretical* value scores than the 1592 women represented in the Cantril and Allport (3) norms.

Hartmann (8), who tested 186 women and 207 men at Pennsylvania State College, gives mean value scores for the two sexes. He finds that "76.23% of the males reach or exceed the *theoretical* median of the females, 63.15% reach or exceed their *economic* median, and 64.45% surpass their *political* median; conversely, only 32.16% of the men reach or exceed the *aesthetic* median of the women, 36.38% excel their *social* median, and 37.60% surpass the female *religious* median. The greatest superiority of the males is in the *theoretical* viewpoint, while the greatest superiority of the females lies in the *aesthetic* attitude" (p. 110). As Hartmann points out, all the differences between the means of the sexes (with the exception of the means for the *social* value) meet the conventional test of reliability. He concludes that "men seem, on the whole, to be more *theoretical, economic, and political*; and women more *aesthetic, social, and religious*" (p. 108). These findings are in agreement with the norms for the two sexes reported by Cantril and Allport (3).

#### VALUES AND ACADEMIC ACHIEVEMENT

Among the studies summarized by Cantril and Allport (3), two had a bearing on the question of the relation of evaluative attitudes to academic achievement.<sup>4</sup> Cantril and Allport, with the assistance of R. D. Reinhardt, found, for 150 students in sociology at Dartmouth, a coefficient of correlation of  $.25 \pm .06$  between college grades and the *theoretic* interest. Pintner (11) found, for a class in mental testing, the following rank order

<sup>4</sup> These studies are presented here, in spite of their inclusion by Cantril and Allport, because there are few data available on this subject, and it seemed desirable to bring all data together in a single place.

coefficients of correlation between grades and evaluative attitudes: *social*, +.46; *religious*, +.05; *theoretical*, -.01; *political*, -.14; *aesthetic*, -.15; *economic*, -.16. However, the grades in this course cannot be considered representative of academic achievement in general, as may be seen from Pintner's statement of how the grades were arrived at: "Marks are a composite made up of scores on examinations and marks given for proficiency in giving group intelligence tests in schools, in organizing and reporting the results of actual testing work carried out in the field. They represent a combination of knowledge about intelligence testing and skill in handling group testing situations" (p. 354). The fact that these grades represent in large part the ability to manage people would probably account for their correlation with the *social* value.

Studies in this field subsequent to the Cantril and Allport summary have been made by Rothney (14), Schaefer (15), and Duffy and Crissy (4).

Rothney (14) investigated the relation of values scores to academic achievement, using as subjects 306 eleventh-grade boys in seven high schools and employing for his values test a revision of the Allport-Vernon<sup>14</sup> *Study of Values* which was designed to make the test more suitable for his subjects. He correlated the test scores with teachers' marks in English, Latin, French, Geometry, Algebra, and an average of the first four of these, over a period of one year. To eliminate the influence on school achievement of scholastic aptitude and chronological age, he administered the Terman Group Test of Mental Ability, predicted the students' achievement on the basis of these scores and chronological age, and then subtracted the actual achievement scores from the predicted scores, thus obtaining achievement scores uncorrelated with age and intelligence test scores. These "discrepancy scores" were then correlated with the Revised *Study of Values* scores. The coefficients of correlation between the various values scores and the five academic subjects ranged from -.13 to +.24, with many coefficients around .00. The coefficients of correlation between the various values scores and the average of the first four academic subjects ranged from -.13 to +.18. Rothney concludes that "the Revised *Study of Values* seems to have very little practical value in the forecasting of academic achievement" (p. 297). It seems possible, however, that Rothney's failure to find any relationship between values scores and academic achievement may have been due to the unreliability of the test of values which he employed. Reliability coefficients, based upon the scores of 149 subjects, range from .00 for the *social* value to .60 for the *religious* value, the six values taken together having a reliability coefficient of .42. These reliability coefficients do not compare favorably with those obtained for the original Allport-Vernon test.

Schaefer (15), with 51 sophomores at Reed College, finds a number of significant coefficients of correlation between scores on the *Study of Values* and scores on the seven sections of the American Council on Education College Sophomore test. The A. C. E. test has the following divisions: Intelligence, Literature, Foreign Literature, Fine Arts, History, General Science, and General Culture. The statistically significant coeffi-

cients of correlation obtained were the following: Intelligence with the *theoretic* value ( $r=.21$ ) and with the *political* value ( $r=-.60$ ); Literature with the *economic* value ( $r=-.47$ ) and with the *aesthetic* value ( $r=.58$ ); Foreign Literature with the *economic* value ( $r=-.37$ ) and with the *aesthetic* value ( $r=.58$ ); Fine Arts with the *economic* value ( $r=-.28$ ) and with the *aesthetic* value ( $r=.47$ ); History with the *economic* value ( $r=-.37$ ) and with the *aesthetic* value ( $r=.37$ ); General Science with the *theoretic* value ( $r=.31$ ); General Culture with the *economic* value ( $r=-.42$ ) and with the *aesthetic* value ( $r=.43$ ). Schaefer concludes that "scores on certain sections of the A. C. E. test can be predicted more accurately from certain 'Value' scores than from intelligence scores" (p. 433).

Duffy and Crissy (4), with 108 Sarah Lawrence College freshmen, found that the six values scores of the Allport-Vernon test, when combined in a multiple regression equation, yielded a correlation of .34 with teachers' ratings on academic achievement made at the end of the freshman year. These same ratings, or average grades, had a correlation of only .29 with intelligence test scores (A. C. E.). A correlation of .28 between average grades and values scores when intelligence was partialled out (by an approximation formula) indicated that the relationship between college grades and values scores did not depend upon the common factor of intelligence. Though no statistically significant relationships were found between grades and the separate values scores, it was suggested that the consistency of the direction of relationship found in many different investigations made it appear probable that there was a tendency for *good* students to have higher *theoretical* and *aesthetic* values scores, and lower *economic* and *political* values scores, than poor students. It was further suggested, on the basis of data from other studies as well as their own, that tests of evaluative attitude were likely to prove of greater usefulness in predicting differences in success in various college subjects than in predicting average academic achievement.

#### VALUES AND COLLEGIATE AND OCCUPATIONAL GROUPS

Harris (7), with 338 Lehigh University students and 62 faculty members, found characteristically different scores on the *Study of Values* for individuals in different fields of study and for students choosing different vocational fields.<sup>5</sup> For example, reliable differences in the *theoretical* value were found between Art students and Business students, between Engineers and Business students, and between Faculty and Students; reliable differences in the *aesthetic* value, between faculty members in Languages and those in the Sciences and Engineering, between Arts students and Business students, and between Arts students and Engineers; reliable differences in the *political* value, between Business men and Arts men, between Engineers and Arts men, between Business men and Engineers, and between Students and Faculty.<sup>6</sup> No reliable difference in the

<sup>5</sup> Scores are given for four values only: *theoretical*, *aesthetic*, *political*, and *religious*.

<sup>6</sup> The group mentioned first have, in each comparison, the higher score.

*religious* value was found between the various curricular groups, or between faculty members and students.

Mean values scores were computed for students expressing the following vocational choices: Law, Medicine, Teaching, Business, Chemical Engineering, and Engineering. The highest value score for Law, for Business, and for Engineering was the *political*, while the highest value score for Medicine, Chemical Engineering, and Teaching was the *theoretical*. Law and Medicine were low in the *religious* value, and Engineering was low in the *aesthetic* value.

Ford (6) applied the *Study of Values* to 465 college freshmen and found no clear-cut differences between four groups (Teachers College, College of Commerce, College of Liberal Arts, and a "highly selected" Teachers College group). He found no significant sex differences and no correlations of any magnitude between values scores and other factors, such as intelligence, size of high school, religion, etc. Since only an abstract of his study is available, it is not possible to determine the basis upon which he draws conclusions which are in certain respects quite different from those of other investigators in this field.

Schaefer (15) found that Reed College students in different fields of major study had different patterns of evaluative attitude. Within each of five fields of study, statistically significant differences were found between scores on pairs of scales in the *Study of Values* test. For example, students of Literature and Language ( $N = 43$ ) had significantly higher scores on the *aesthetic* value than on the *economic* value; students of Natural Science ( $N = 39$ ) had significantly higher scores on the *theoretic* value than on the *political* value; students of Political Science and Economics ( $N = 22$ ) had significantly higher scores on the *social* value than on the *religious* value; students of History ( $N = 17$ ) had significantly higher scores on the *aesthetic* value than on the *economic* value; and students of Psychology ( $N = 15$ ) had significantly higher scores on the *theoretic* value than on the *economic* value.

The *Study of Values* was used by Anderson (2) in an individual counseling project for a women's organization in New York City, and a comparison was made between test results and confidential credentials. The investigator reports consistency in the results obtained from these two sources of information and finds that the dominant values of her group of 26 Y. W. C. A. secretaries are *religious* and *social*, as might be expected on the basis of their choice of, and selection for, the field of work in which they were engaged.

Van Dusen, Wimberly, and Mosier (20), using a test of Spranger's value types to be described in a subsequent section of this review, examined the relationships between the five evaluative attitudes of their test and (1) scores on the men's form of the Strong Vocational Interest Blank and (2) vocational choice. Their subjects were 81 male students in introductory courses in Psychology at the University of Florida. They report as follows:

"(1) Economic values have a high relation with Office Clerk, Schoolman, and Certified Public Accountant. The trait is negatively related to Engineer and has practically no relationship with Law. Little can be drawn from the

vocational choices within this group. (2) Theoretical value is positively related to Schoolman and Engineer. It shows low negative relation with Certified Public Accountant. (3) In examining the vocational choices of the Aesthetic group, seventeen in the highest quartile were found to have chosen an aesthetic vocation (such as Architecture, Actor, etc.) as compared to only three in the lowest quartile. (4) Social preference is positively related to Law, and Office Clerk, the latter being a vocation possessing no apparent *a priori* relationship with the trait. It has a high relation with Schoolman. Negative relation is shown with Engineer and practically no relation with Certified Public Accountant. (5) Religious has a high positive relation with Schoolman and Office Clerk (another unpredictable relationship) and zero relation with Law, Engineer, and Certified Public Accountant. One-third of the upper quartile on Religious were interested enough to ask to have the Strong Blank scored on Ministry as compared to none in the lower quartile. No one in the lower quartile mentioned the Ministry as a vocational choice, while six in the upper quartile chose Ministry as a vocation" (pp. 59-60).

Duffy and Crissy (4), with 108 freshmen at Sarah Lawrence College, correlated scores on the *Study of Values* with scores on 10 of the scales of the Strong Vocational Interest Blank for Women and found the following statistically significant relationships:

<i>Vocation</i>	<i>Values Showing Positive Relationship</i>	<i>Values Showing Negative Relationship</i>
Lawyer	Economic and Political	Aesthetic and Religious
Physician	Theoretical	
Artist	Aesthetic	Economic and Social
Author	Aesthetic	Economic and Social
Nurse	Social	Aesthetic
Librarian	Aesthetic	Social
Housewife	Social	Theoretical
Office Worker	Economic and Political	Aesthetic and Theoretical
Secretary-Stenographer	Political	Theoretical

#### OTHER APPLICATIONS OF THE *Study of Values*

Schooley (16), testing 80 married couples with the *Study of Values*, found that the values scores of husbands and wives were, in general, positively correlated, and that couples who had been married for a longer period of time showed closer relationships for some values and less close relationships for other values than couples who had been married for a shorter period of time.

Stump (18) gave the *Study of Values* to 79 students at Keuka College and compared the values scores with scores on the Almack Sense of Humor Test, self-estimates of humor, and scores on the American Council psychological examination. He found a rather high correlation between self-estimated humor and both *aesthetic* and *social* values scores, and low correlations between values scores and the A. C. E. test.

Ferguson (5) filled out the *Study of Values* as he believed it would be filled out by Jonathan Swift and concluded from the values scores obtained that "Swift was governed first of all by religious motives,

secondarily and perhaps equally by political, social, and economic motives, then by aesthetic, and last of all by theoretic ones" (p. 28).

Pintner and Forlano (12, 13) compared the scores made by 240 women university students on the Allport-Vernon *Study of Values* with their responses on the Thurstone Personality Schedule, in an attempt to discover whether there is any relation (a) between emotional instability, or neuroticism, and the individual's pattern of interests, and (b) between dominant interests and patterns of response on the items of the Personality Schedule. No significant differences in neurotic tendency were found between individuals scoring high and individuals scoring low on the various interests represented in the Allport-Vernon test; nor was there any evidence that individuals deviating markedly in their interests from the group to which they belong, or deviating markedly from their own central tendency, showed any greater or less emotional stability than other individuals. An analysis of the items of the Thurstone test which were more frequently answered in the maladjusted direction by individuals scoring high or individuals scoring low for each of the various interests of the Allport-Vernon test revealed no clear-cut patterns, though "certain trends in certain groups seemed logically consistent" (12, p. 259).

#### REVISIONS AND FACTOR ANALYSES

Lurie (9) has constructed a test of evaluative attitude based upon Spranger's six categories of value, in which he uses material very similar to that of the Allport-Vernon test. The items in the Lurie test are divided into four groups: (1) interests, (2) ideals, (3) preferences with regard to people, and (4) beliefs and opinions. Each item is responded to by a rating on a seven-point scale. Test scores were obtained for 203 students in the Biological Sciences Survey Course at the University of Chicago. The Thurstone multiple factor technique was applied to determine the underlying factors in the tests. Lurie reports four basic clusters of items, which he describes as follows: "I—the *social* type, which values especially human relations; II—the *Philistine* type, which emphasizes utility and power at the expense of beauty and harmony; III—the *theoretical* type, which stresses truth and the cognitive values; and IV—the *religious* type, which emphasizes the spiritual side of life" (p. 32). Three less important factors influencing the scores to a marked extent were found to be: (1) open-mindedness, (2) practicality, and (3) an aesthetic attitude, which Lurie describes as being of a superficial and onlooking, rather than participating, sort. Factor I, the social type, is said to correspond rather closely to the factor "interest in people," which was found by Thurstone (19) in his multiple factor study of

the men's form of the Strong Vocational Interest Blank.<sup>7</sup> Factor II, the Philistine type, is made up of items from Spranger's *economic* and *political* types and is inversely related to the *aesthetic* type. Factor III, the theoretical type, corresponds to Thurstone's factor, "interest in science." Lurie points out that "all investigators using the Allport-Vernon blank have found a close relationship to exist between the political and economic scores, and an inverse one between these and aesthetic items; there is nothing particularly surprising in the conclusion that high scores on both political and economic items are due to high scores in a single factor, or even that high aesthetic scores indicate primarily low loadings in this factor, but the basic identity was not brought out by simple correlational analysis without the multiple factor technique" (p. 31). Lurie concludes that "a more plausible and self-consistent system of personality classification can be founded on the four types derived by factor analysis than on the six types which Spranger developed by intuitive analysis of experience" (p. 32).

This interesting attempt to construct a values test based upon empirically established functional units appears to the reviewer to suffer from two defects: (1) lack of consistency in the choice of items for certain categories, particularly the "political" category, and (2) a scoring system which is not in all respects satisfactory. Classified as "political," we find such items as: a liking for teaching recent political theory, which, in Spranger's terms, would appear to represent theoretical interest, not interest in power; an interest in national affairs, which might be social if it represents a desire to improve the welfare of the masses; preference for reading *Current History*, which might well derive from other interests than those of power and power relationships; and the approval, as an argument against war, of the statement that it is ineffective as an instrument of national policy—a conclusion more likely to be arrived at by the "theoretical" man than the man striving for power. Mixed in with "political" items of the foregoing variety are a number of items which represent well Spranger's conception of the "political" man: *e.g.* being ambitious and striving, liking successful and eminent people, approving of a government which offers opportunities to ambitious citizens. In view of this inconsistency of classification, it is not surprising that

<sup>7</sup> The four factors found by Thurstone in his analysis of the interests of 18 professions included in the Strong test are: (1) interest in science, (2) interest in language, (3) interest in people, and (4) interest in business.

Lurie finds, for example, a correlation of -.02 between political interests and political preferences in people, as well as other evidences that his "political" scale is not measuring an independent and self-consistent evaluative attitude.

The scoring system used by Lurie (rating each item on a seven-point scale) was, perhaps, an attempt to avoid a disadvantage inherent in the method employed by Allport and Vernon (ranking alternative answers in the order of preference). The Allport-Vernon method has the effect, presumably, of making the scores of one individual not directly comparable with those of another, since an individual rates, not the absolute importance which he attaches to a certain category of value, but the relative importance of that value as compared with other values. Thus, preference for one group of values must be always at the expense of another group of values. The seven-point rating scale obviates this difficulty by allowing the individual to rate each item without regard to any other item. It introduces, however, the possibility of another source of error, as has been recognized.<sup>8</sup> It makes it possible for one group of subjects to interpret the scale categories consistently higher or lower than another group of subjects, or to mark them consistently more at the extremes. Van Dusen, Wimberly, and Mosier (20), who, following Lurie, used this method of scoring, maintain that, if one group had consistently marked the scale-categories higher than another, it would have resulted in definitely positive intercorrelations between the five tests. Since many of the intercorrelations obtained in their study approach zero, they conclude that the test was free from this source of error. It appears to the reviewer, however, that they have overlooked the possibility that one group of subjects may interpret the scale-categories, not consistently higher, but consistently more *at the extremes* of approval and disapproval; and, unless the values rejected are always the same for a given group of subjects scoring high in a certain value, the correlation of the accepted value with the other values would approach zero rather than be high negative, for extreme acceptances would be cancelled out by extreme rejections. Evidence that one group of subjects may score the value-categories consistently higher than another group is found in Lurie's report that, for his subjects, the general level of women's scores is slightly higher than that of men's scores, and this, he believes, has been effective in producing reversals of the sex differences found in certain value-categories of the Allport-Vernon test (9, p. 22). For example, in Lurie's study women scored

<sup>8</sup> Cf. Van Dusen, Wimberly, and Mosier (20, p. 59).

higher than men in all *theoretical* scores except "interests," whereas investigators with the Allport-Vernon test have consistently found men to score higher in *theoretical* values. These various considerations lead the reviewer to conclude that the Allport-Vernon method of scoring, in spite of its admitted limitations, may actually be superior to the one which has replaced it in recent versions of values tests. Its strength lies in the fact that the individual taking the test is forced *✓* to *choose*. He may, as in life situations, favor one interest only at the expense of another. Since the interests measured by the test are widely inclusive, if not all-inclusive, the test scores of different individuals may be more strictly comparable than was at first assumed.

Van Dusen, Wimberly, and Mosier (20) constructed a Standards Inventory for the measurement of evaluative attitudes which was based upon the Lurie test. The Inventory consists of 96 items, 16 for each of Spranger's types, but the Economic and Political items are combined into a single scale of 32 items, which is called Economic. The test consists, then, of five scales: Economic, Social, Religious, Aesthetic, and Theoretical. The items for the test were selected from the first three sections of Lurie's battery: *interests*, *ideals*, and *preferences with regard to people*. The method of scoring is the one employed by Lurie. The test was standardized on a group of 81 students in introductory courses in Psychology at the University of Florida.

The scales were found to possess reliabilities too low to make the Inventory useful in individual prediction, but high enough to permit group comparisons. The least reliable scale was the Economic. The lack of reliability of this scale may, in the reviewer's opinion, be due to faulty item selection, since the items were taken directly from Lurie's Economic and Political categories, where the classification did not appear to be entirely self-consistent. The investigators conclude that the Economic and Political items of Lurie's test should not be combined into a single scale. The five values scales are not correlated with intelligence test scores, and, with the exception of the Religious scale (which is correlated with the Social), they are not significantly intercorrelated. The test was validated by means of a comparison of scores on the various scales with scores on the Strong Vocational Interest Blank and with the vocational preferences expressed by the subjects.

Maller and Glaser (10) have constructed an Interest-Values Inventory which is based in part upon the Allport-Vernon *Study of Values*, but differs from that test in certain significant respects. The

Maller-Glaser test is designed to measure four types of *interest*: *theoretic*, *aesthetic*, *social*, and *economic*.<sup>9</sup> The *political* and the *religious* interest categories of the Allport-Vernon test are omitted, though the *political* category appears to be represented to a minor degree in the *economic* scale, where a few of the items seem to imply interest in power and prestige as well as in utility. The *social* value, as the authors point out, is defined in a more consistent way than it is in the Allport-Vernon test. The *social* value in the Maller-Glaser test seems to represent primarily interest in the social welfare of groups, while in the Allport-Vernon test this value seems to represent interest in person-to-person relationships as well as interest in group welfare. It is quite possible that there is not a high degree of correlation between these two aspects of the social interest.

The Interest-Values Inventory employs *relative ranking* of alternatives in two of its three parts and a so-called *absolute* rating of items in the third part; hence, it should provide an interesting opportunity to compare the merits of these two methods of scoring. Parts IV and V of the test consist of self-ratings and personal data not directly connected with evaluative attitudes.

The test was validated by giving it to four criterion groups and retaining only those items which significantly differentiated the groups. The criterion group for the *theoretic* value was a group interested in mathematics and science; for the *aesthetic* value, a group interested in art and music; for the *social* value, a group interested in social work and nursing; and for the *economic* value, a group interested in business and advertising.

Tentative norms for the test, and the reliability of the test as determined by the test-retest method, are reported.

Duffy and Crissy (4) report a factor analysis of the Allport-Vernon *Study of Values* in which three factors were found which correspond closely with three of the four primary factors found by Lurie (9) in his factor analysis of a different test of evaluative attitude, and with three of the four factors found by Thurstone (19) in his factor analysis of the Strong Vocational Interest Blank. These three factors could be called, depending upon whether one follows the terminology suggested by Lurie or by Thurstone, (1) a "Philistine" factor, or Interest in Business, (2) a Social factor, or Interest in

<sup>9</sup> In selecting the value-categories to be included in the test, the authors were influenced in part by the findings of Thurstone in his factor analysis of the Strong Vocational Interest Blank. They suggest that the four value-categories of their test correspond closely to the four primary factors of interest found by Thurstone.

People, and (3) a Theoretical factor, or Interest in Science. Like Lurie, these investigators found no primary *aesthetic* factor, the *aesthetic* value in the Allport-Vernon test appearing to be, in terms of the three factors found, anti-Philistine and somewhat pro-theoretical. Unlike Lurie, they found no primary *religious* factor, the *religious* value, with their subjects, appearing to consist chiefly of anti-Philistine and anti-theoretical interests. The *economic* and *political* values of the Allport-Vernon scale correlated highly, and about equally well, with the "Philistine" factor, while the *social* and the *theoretical* values maintained their separate identity.

The three factors found by Duffy and Crissy showed certain significant correlations with scores on the Strong Vocational Interest Blank for Women, but they yielded no significant correlations with college grades or with intelligence test scores.

#### SUMMARY AND CONCLUSIONS

Investigations employing the Allport-Vernon *Study of Values*, as well as values tests constructed by Rothney, by Lurie, by Van Dusen, Wimberly, and Mosier, and by Maller and Glaser, have been reviewed. Data from these studies indicate that the investigation of evaluative attitudes is an approach of far-reaching significance in the study of personality.

The major conclusions suggested by a survey of these investigations are:

(1) There are characteristic differences between the evaluative attitudes of students in different colleges, between students in different fields of study within the same college, between individuals in different occupations, between individuals who express a preference for different occupations, between individuals who score differently on the Strong Vocational Interest Blank, and between men and women. For example, individuals in scientific fields have high *theoretic* value scores; individuals in artistic fields have high *aesthetic* value scores; and individuals in business, and those studying commercial subjects, have high *economic* value scores. Men score higher on *theoretic*, *economic*, and *political* values; women score higher on *aesthetic*, *social*, and *religious* values.

(2) Evaluative attitudes are definitely, though perhaps not closely, related to academic achievement. A low positive correlation between average college grades and combined evaluative attitudes has been demonstrated, and it is possible that a more adequate set of grades would yield a higher correlation, since the grades used in the

study to which we refer correlated no more closely with intelligence test scores than they did with values scores. Moderately high correlations have been obtained between certain evaluative attitudes and academic achievement in specific fields, as measured by the subject-matter divisions of the American Council on Education College Sophomore Test. It seems probable that values scores, while not unrelated to *average* college achievement, are much more closely related to *differential* achievement in specific fields. The relationship demonstrated may be expected to be closer when achievement is measured by an achievement test than when it is indicated by college grades. Converging lines of evidence suggest, but do not demonstrate, that good scholarship is more likely to be associated with highly developed *theoretical* and *aesthetic* values than with emphasis upon *economic* and *political* values.

(3) During the college years the values scores of individuals show a fair degree of constancy, though there seems to be a trend toward increased *theoretic* and *aesthetic* values scores, and possibly toward increased *social* values scores, in the later as compared with the earlier years.

(4) The Allport-Vernon *Study of Values*, as the pioneer test of evaluative attitudes, has been used in most of the investigations in this field up to the present time, but other tests of evaluative attitude are now available. Rothney has prepared a revision of the Allport-Vernon test designed to make it suitable for high school children. The reliability of this test, however, is not as high as that of the Allport-Vernon test. Lurie has constructed a test of evaluative attitude based, like the Allport-Vernon test, upon Spranger's six categories of value (*theoretical*, *economic*, *political*, *aesthetic*, *social*, and *religious*); and Van Dusen, Wimberly, and Mosier have prepared a revision of the Lurie test which contains five value scales, the *economic* and *political* values having been combined into a single scale called "economic." An advantage claimed for the Lurie test and its revision is that the scores on the various items of these tests are independent of each other, since each item is responded to by means of a rating on a seven-point scale, while in the Allport-Vernon test the items are responded to by means of ranking them in the order of preference. The writer is of the opinion, however, that the "relative" scoring technique of the Allport-Vernon test may actually be superior to the so-called "absolute" scoring method proposed in its stead. It appears, also, that there is a certain lack of consistency in the item selection of parts of the Lurie test, and hence of the Van

Dusen, Wimberly, and Mosier test, which is based upon that test. The Maller-Glaser Interest-Values Inventory seems to be one of the most carefully prepared of the tests of evaluative attitude which have appeared since the Allport-Vernon test. It contains four scales for measuring evaluative attitude: the *theoretic*, the *aesthetic*, the *social*, and the *economic*. Two sections of the test employ the so-called "relative" method of scoring and one, the so-called "absolute" method. The merits of this test, as compared with the Allport-Vernon *Study of Values*, cannot be determined until a larger body of data has been accumulated concerning the more recent test.

(5) Factor analyses of values tests have suggested that the *economic* and *political* values, as measured in the Lurie test and in the Allport-Vernon test, are not separate and distinct, but might well be combined into a single scale. The *aesthetic* value, as measured in these tests, seems to be, not a positive and distinct evaluative attitude, but rather an "anti-economic and political" and somewhat "proto-theoretical" attitude. In one factor analysis no evidence was found for a *religious* factor, the religious value in this study appearing to consist chiefly of a lack of interest in *economic*, *political*, and *theoretical* values. However, it is possible that this latter finding can be explained in terms of the selection of subjects used in the investigation. All investigators have found that the *theoretical* value and the *social* value are positive and distinct evaluative attitudes, and no investigator has suggested the omission of either of them from a test of values or the combination of either of them with any other category of value.

(6) Recent studies fully support the Cantril and Allport (3) conclusion that evaluative attitudes are "pervasive, enduring, and above all, generalized traits of personality" (p. 272).

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## THE PSYCHOLOGISTS' UNDERSTANDING OF SOCIAL ISSUES

BY RALPH H. GUNDLACH

*University of Washington*

When the United States entered the first World War, psychologists, as an associated group, volunteered their professional services. Their contribution was considerable, both to the conduct of the War and to psychology.

When the United States entered the big world depression, psychologists did nothing and, as a group, have so far done nothing. For nearly 10 years we have suffered through a national social and economic crisis; yet, from an examination of our professional journals and the programs of our professional meetings, one might conclude that psychologists were oblivious of the fact that our social institutions are rattling about our ears.

In fact, the world at large is as ignorant of the possible contributions of psychologists as psychologists appear to be about the world. Is it not true that "psychology" to the man in the street is symbolized by the magazines of that name which he can purchase at any drug-store; that the books on psychology which librarians and chain-store book sellers must stock and replenish have to do with gaining friends, with giving up science for religion, and with propounding the case for telepathy?

There are many items of general social significance about which psychologists have special information and about which the great majority of psychologists would agree. Yet the public at large may be quite muddleheaded, or even quite wrong, about these items. Following the discussion at the Western Psychological Association symposium on "Contributions of Psychology to the Understanding of Social Issues," it was suggested that a sampling of such items be formulated and tried out amongst the membership at the national Association meetings at Palo Alto.<sup>1</sup> Since the University of California started the week prior to the meetings, it was possible, with

<sup>1</sup> The questions were suggested and formulated with the assistance of Professors F. Fearing, H. Gilhouse, E. Hilgard, K. Lewin, R. Stagner, and R. Tryon.

the coöperation of Professor Tolman, to get a quick sample of undergraduate—and psychologically inexpert—opinion on these items.

The questionnaire was filled out by about 360 college students at Berkeley and by about 140 attendants at the A. P. A. meetings, 40 of whom were females (Table I). Over 25% of the persons filling out the blank at Palo Alto failed to indicate whether they were Members or Associates of the A. P. A. In age distribution, however, these persons fell between the distribution of age for admitted Members and Associates. Fifty-six per cent of the Members filling out the blank were 40 or over; and so were 28% of the Associates and 45% of those who did not indicate their status. The questions were designed to offer the simplest, least dogmatic, most general approach to fundamental problems. They follow in an order different from their appearance on the questionnaire.

TABLE I  
CHARACTER OF PERSONS AT THE A.P.A. MEETINGS FILLING OUT  
THE QUESTIONNAIRE

	Age in the:												Grand Total		
	20's		30's		40's		50's		60's		Not Given		Total	Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Member	0	0	10	2	4	1	5	1	2	2	1	0	22	6	28
Associate	21	8	18	7	8	8	3	1	0	1	0	0	50	25	75
No Mention	6	4	8	2	5	1	1	2	0	0	7	0	27	9	36

(1) *By reason of their inherited endowment, (1) 75%, (2) 50%, (3) 30%, (4) 10% or less, of individuals are incapable of democratic participation in government.*

This question immediately distinguishes the individual who believes in democracy and who must take answer 4. Any other answer represents the view of the patronizing aristocrat, the nobility, as expressed in the doctrine of the "elite" made fashionable by Fascism. Of A. P. A. male Members, 90% selected answer 4, but of all males at the meetings, 78% selected the democratic answer. Sixty per cent of the female attendants at the A. P. A. meeting picked answer 4. The students are much more arrogant and less democratic, 45% of the males and 31% of the females only selecting this item.

(2) *There is no modern nation of which the people are inherently superior in ability to the rest.*

This is opposed to the doctrine of the Nazis, which further maintains that certain peoples are inferior regardless of their cultural and scientific achievements. Thirteen per cent of the psychologists maintained that this statement is false. About a third of the college students also called it false and thus maintained the doctrine of the "racial" superiority of some nationality group.

(3) *The superior people in our culture are justified in dominating national affairs by force.*

Only one male and one female from the A. P. A. meetings held

domination by force to be justifiable. However, fully a third were doubtful. An equal number of students were doubtful, but almost a quarter of them felt that the elite are justified in abandoning the democratic processes of persuasion when the "masses" are recalcitrant and in establishing their way by force. Obviously, people who so justify the use of force do not expect to have the force used against them.

(4) *Women are by nature less efficient and intelligent than men.*

Two males and one female at the A. P. A. meetings thought this to be true, while about 90% thought it false. Twenty-eight per cent of the male students and 16% of the female thought women inferior. This is the question upon which psychologists were most agreed. If this question is false, we may ask why it is that women are discriminated against in so many occupations.

(5) *As a class, married women would make (1) better, (2) as good, (3) poorer, teachers and professional workers than (as) single women by reason of their emotional adjustment.*

One male and two female psychologists hold that marriage is an emotional handicap. The remainder are split between the notions that celibacy or marriage have no effect, or that marriage tends to improve emotional stability enough to have it affect favorably the professional work of the woman. What it may or may not do to the man is not a present social issue, since it is usually only women teachers and some women government employees that we insist be single.

Half the students think marriage might help, but 16% are sure that marriage disturbs the efficiency of the married working woman.

(6) *Man has an inherited desire and need for war.*

Two psychologists say "yes"! Seven per cent are doubtful, and four won't answer. By contrast, nearly a quarter of the students believe war is biologically demanded. It certainly is an established institution of modern times.

(7) *Competition for personal advancement is a (1) socially unnecessary, (2) socially necessary, (3) biologically inherited, form of social motivation for any successful industrial society.*

Answer 3, the instinct of competition, is supported by 18 psychologists, 11% male and 17% female. Fully 40% of the students still hold fast to this notion.

The other two alternatives provide a choice for the rugged individualist who believes private enterprise is the necessary drive in society, and the individual who believes that other types of motives, even perhaps coöperation, may be employed successfully in an industrial society. Forty per cent of the psychologists now believe competition for personal advancement is socially unnecessary, as against 8% of the students.

(8) *Delinquent and criminal behavior can best be reduced by (1) selectively breeding out the criminal class, (2) more stringent penalties, (3) changing the structure of society, (4) none of these.*

Answer 3 means we can organize a much more satisfactory life and that society is responsible for producing its criminals. Two-thirds of the psychologists agree on answer 3, while 20% of the males and 26% of the

females feel that none of these items suggested can reduce criminal and delinquent behavior. Only 40% of the students think a change in social structure would be effective. Fully 28% of them still cherish the notion that the best way to get rid of criminals is by selective breeding.

(9) *If our society provided economic security for its members (jobs, unemployment and health insurance, pensions, adequate wages), the consequence would be (1) increase, (2) decrease, (3) no change in:*

- A. *Suicide and crime rates*
- B. *Ambition and energy of employable classes*
- C. *Individual health, happiness, and output*
- D. *Neurotic symptoms and personality disintegration.*

Over three-fourths of the psychologists hold that these conditions of social security would be highly beneficial, decreasing crime, suicide, neurotic symptoms, and increasing health, happiness, and output. A large plurality maintain that these conditions would increase the ambition and energy of the employed classes. These answers call for a political program ensuring such economic security.

The students follow the psychologists in items A and C. But 60% of them feel that the working classes work only when pushed by the thought of insecurity and sickness. Obviously, they consider themselves to be a different kind of person, with a different set of motives than the working classes. Likewise, over 21% of the students have somehow been taught that security and jobs are bad for one's personality, even though 47% hold that personality will be improved.

(10) *Desirable character and personality are (1) only developed, (2) usually helped, (3) unaffected, (4) usually hindered, by poverty, uncertainty, and hardship.*

The first two answers are used to justify the defeat of social security unemployment insurance or moves toward more extensive social change. Only 5% of the psychologists selected either one of these alternatives, and 78% of the males and 85% of the females selected answer 4. About 25% of the students selected either answer 1 or 2; and only 65%, answer 4. This majority answer contradicts the majority answer to question 9B, above.

(11) *(1) Most, (2) some, (3) none, of the differences found with intelligence tests between racial, social, and economic groups can be accounted for in terms of different social environments.*

There was a time when many persons maintained that the differences found by use of intelligence tests measured biological differences among unskilled, skilled, clerical, business, and professional classes; between rural and urban populations; between southern and northern Negroes; and among Negroes, native-born Caucasians, and the various immigrant groups. Practically no one now believes this. The voting splits over the amount of the environmental influence, with the psychologists giving the edge to "some" and the students to "most." Students do not know about the "constancy of the IQ."

(12) *The level of ability of school children will be (1) unaffected, (2) raised, (3) permanently decreased, by any extensive curtailment of present educational facilities.*

Twenty-five per cent of the male psychologists refused to answer this question. Nevertheless, over 50% of all psychologists turning in questionnaires held that ability would be permanently decreased. Only 20% of the males and 40% of the females held that extensive educational cuts would not affect the level of ability of the pupils. Twenty-seven per cent of the students maintained there would be no effect, and about 67% maintained that abilities would be decreased.

The first answer is being used to justify further cuts in our educational budgets. However, if answer 3 is correct, then adult ability is, in part, a function of our childhood opportunities for educational experience; and, furthermore, optimal educational conditions might raise the intellectual level of the population. This question fits in with the preceding one, of course, and many persons have pointed out that the tremendous differences between the educational facilities, say, for southern Negroes in contrast to urban northern whites, are reflected in the adult level of abilities of the two groups.

TABLE II  
DISTRIBUTION OF SCORES OF INDIVIDUALS IN TERMS OF  
CONFORMITY WITH MAJORITY OPINION  
(Answer 1 or 2 Permitted in Questions 5 and 11)

Question	A.P.A.		Students	
	M	F	M	F
2	0	0	1	0
3	1	0	2	1
4	1	0	2	4
5	0	2	3	1
6	1	0	10	6
7	4	7	12	11
8	10	8	12	13
9	7	12	18*	20*
10	9	10	10	16
11	10	2	16	11
12	12*	23*	8	8
13	7	12	4	6
14	17	8	3	3
15	16	8	0	0
16	3	8	1	0

\* Median

(13) *Many Americans possess emotional attitudes and prejudices which would make Fascism easy to establish in this country.*

Only 8% of the psychologists hold this to be false. Of the males, 70% say that it is true, as against 55% of the females. Students are much less aware of such attitudes. Thirty-nine per cent of the males and 47% of the females hold the statement is false, and 50% of the males and 38% of the females hold that it is true.

It is interesting that many more students marked questions in ways that may be called "fascistic" than did the psychologists, but that nearly half of the students think that our American traditions contain no traditions or attitudes that are easily compatible with Fascism.

(14) *Should psychologists make a concerted effort to educate the public regarding psychological matters of general concern?*

TABLE III  
POLL OF PSYCHOLOGISTS' AND STUDENTS' OPINIONS ON ITEMS OF SOCIAL IMPORT

	Answers in Per Cent								
	1		2		3		4		
	M	F	M	F	M	F	M	F	
(1) By reason of their inherited endowment, (1) 75%, (2) 50%, (3) 30%, (4) 10% or less, of individuals are incapable of democratic participation in government.	P	2	0	10	20	11	20	78	60
(2) There is no modern nation of which the people are inherently superior in ability to the rest: (1) true, (2) false, (3) no evidence.	S	12	9	16	17	28	43	45	31
(3) The superior people in our culture are justified in dominating national affairs by force: (1) true, (2) false, (3) no evidence.	P	63	72	14	12	19	15		
(4) Women are by nature less efficient and intelligent than men: (1) true, (2) false, (3) no evidence.	S	56	60	34	30	10	11		
(5) As a class, married women would make (1) better, (2) as good, (3) poorer, teachers and professional workers than (as) single women by reason of their emotional adjustment.	P	1	2	69	63	26	37		
(6) Man has an inherited desire and need for war: (1) true, (2) false, (3) no evidence.	S	22	25	46	47	33	28		
(7) Competition for personal advancement is a (1) socially unnecessary, (2) socially necessary, (3) biologically inherited, form of social motivation for any successful industrial society.	P	50	38	46	57	1	5		
(8) Delinquent and criminal behavior can best be reduced by (1) selectively breeding out the criminal class, (2) more stringent penalties, (3) changing the structure of society, (4) none of these.	S	10	7	45	51	40	38		
	P	7	12	1	0	67	65	19	25
	S	26	29	6	7	36	41	26	

		Answers in Per Cent							
		1	2	3	4	M	F	M	F
(9)	A. Suicide and crime rates	P	1	0	83	85	7	0	
	B. Ambition and energy of employable	S	4	3	79	85	16	11	
	classes	P	42	45	12	17	26	10	
	C. Individual health, happiness, and	S	24	30	59	60	14	10	
	output	P	76	85	3	2	3	2	
	D. Neurotic symptoms and personality	S	75	73	12	12	8	10	
	disintegration.	P	3	0	71	80	6	12	
		S	22	21	44	24	20		
(10)	Desirable character and personality are (1) only developed, (2) usually helped, (3) unaffected, (4) usually hindered, through (by) poverty, uncertainty, and hardship.	P	1	0	4	5	6	7	
(11)	(1) Most, (2) some, (3) none, of the differences found with intelligence tests between racial, social, and economic groups can be accounted for in terms of different social environments.	S	8	6	16	17	14	10	
(12)	The level of ability of school children will be (1) unaffected, (2) raised, (3) permanently decreased, by any extensive curtailment of present educational facilities.	P	47	42	49	57	1	2	
(13)	Many Americans possess emotional attitudes and prejudices which would make Fascism easy to establish in this country: (1) true, (2) false, (3) no evidence.	S	52	60	44	39	4	4	
(14)	Should psychologists make a concerted effort to educate the public regarding psychological matters of general concern? (1) yes, (2) doubtful, (3) no.	P	21	42	1	0	53	50	
		S	27	26	6	5	62	70	

M=male, F=female, P=psychologists, S=students

Four male psychologists and three female said "No." Doubtful was the answer of 7% of the males and 20% of the females. But 84% of the males and 70% of the females said that the statement is true, and hence recognize that as scientists and as citizens they have an obligation to their fellow man.

Now, if we look back over the questions, we see that they have to do with fundamental notions of democracy; with race, sex, and class discrimination; with educational handicaps; and with social reconstruction. The questions all have bearing in terms of the social and political struggles current today among socialism, political democracy, and Fascist dictatorship. They have to do with the nature of the social institutions that shall be set up. In every case, a plurality or a majority of psychologists select the answers that are liberal, progressive, democratic. Or perhaps they should be called "radical."

A device for scoring each paper in terms of its coincidence with the group responses was worked out, selecting the most popular answer as correct in each case except for questions 5 and 11, where either answer 1 or 2 is acceptable. The question whether psychologists should make an effort to educate the public was not included, and each alternative to question 9 counted as one.

The distribution in per cent of psychologists and students, male and female, is found in Table II.

The irregularity of the distribution for the psychologists, especially the males, indicates that certain sets of questions go together. The only effort to sort out any interrelationship in the answers was in connection with question 13, about the presence of Fascist tendencies in this country. Of those psychologists who said the question was false, that we did not have attitudes that would permit the easy establishment of Fascism, only one man had a score above the median for psychologists. Likewise, the male A. P. A. Members who marked themselves doubtful on this question had, with one exception, scores of 7, 8, or 9. Apparently, the more fascistic ideas and attitudes one has, the less one recognizes them as fascistic.

In conclusion, it appears that a considerable sampling of American psychologists have knowledge and opinions of a professional sort about items relevant to public policy. The views of a psychologically naïve college population differ considerably from those of the experts. But the psychologists now express a desire and a willingness to make a concerted effort to educate the public regarding psychological matters of general concern. We then can expect at least something of a shift in the emphasis in the teaching of psychology and in the press releases of the organizations of psychologists.

## CONTEMPORARY HUNGARIAN PSYCHOLOGY

BY GEORGE W. HARTMANN AND PAUL SCHILLER

*Columbia University*

*University of Budapest*

The nature of current instruction and research in psychology, as well as in other scientific areas, is a function of many things. High in importance among the conditions which regulate the quality and quantity of that form of intellectual activity known as psychological inquiry are those aspects of the national culture designated as "political" and "economic." Institutional interdependence is so marked in our day that it is a bit startling to find many members of the profession of psychology relatively insensitive to numerous circumstances which determine its own being. The present paper is an effort to illustrate this connection by an examination of the current work of psychologists to whom the Magyar tongue is native.

### NATIONALISM AND ETHNOCENTRISM AMONG PSYCHOLOGISTS

The hypertension which is so conspicuous a part of the internal and external life of every country today has probably led to an intensification of the usually weak nationalistic attitudes of psychologists themselves. One result of this has been an unfortunate diminution in the attention paid to the work of colleagues in other lands. This is particularly marked now in the case of American psychologists with respect to German production; most of them have adopted the position that German psychology since Hitler is "dead." Their reading of the foreign technical literature has correspondingly been reduced on the assumption that all the really good German psychologists are now in the United States and that those who remain active in the Reich are doing nothing of value for the science.

No one can doubt that the cultural life of America has been enriched by the presence of many distinguished émigrés, but it is not true that German psychology has been reduced to zero. Anyone holding this position is guilty of a grossly prejudiced opinion. Such grand old organs as the *Zeitschrift für Psychologie* and the *Archiv für die gesamte Psychologie* wag on much as before, albeit with a heavier dosage of obeisance to the current Nazi mythology than a manly self-respect would justify. The output of the Institute at

Munich, for example, may seem as dull and drab as ever, but in that respect it is not so very different from the conventional experimental products of many American centers of graduate study. There is obviously much need for a mature and accurate "psychology of psychologists" to supply us with an adequate perspective on what are now among the central problems of the profession.

To most English-speaking psychologists, the work of their Hungarian confreres is all but inaccessible. Those who think about it at all do so chiefly in connection with the work of the abortive international congresses or because of some personal curiosity in the history of psychology—even then, they are disposed to view the Hungarian situation as but a dim "Balkan" reflection of the state of affairs in Germany. This is far from correct, as the present sketch will show. The commonly prevailing blurred impression of psychology among the Magyars should be replaced by sharper outlines after a perusal of the content under the following headings. It should help establish significant points of likeness and difference that are present in widely separated geographical settings.

#### (1) PSYCHOLOGICAL ORGANIZATIONS AND PERIODICALS

The Hungarian Psychological Association was established in 1928 and is "constitutionally" obligated to pursue these prime objectives: (1) the development of general and applied psychology; (2) the support of psychological research within the borders of Hungary; (3) making available the findings of psychology for the advancement of the national culture. The Association is divided into "sections," such as the pedagogical, psychotechnical, aesthetic, genetic, etc. Its organ, the *Hungarian Journal of Psychology*, appears in one volume annually, and is especially concerned with reporting native and foreign psychological "movements"; a summary of its original contributions is always given in German or French. The founder of the Association was Professor Paul Ranschburg, the present honorary Chairman; the President is Professor Ladislaus Benedek; the Vice-Chairman, Dozent Stefan von Boda.

Other learned societies share responsibility for the furthering of certain psychological fields. The Hungarian Union for Child Study publishes a magazine called *The Child*, and the official periodical of the Philosophical Society, *The Athenaeum*, is an important source of psychological theorizing. The work of the Pedagogical Association is particularly relevant, but the primary agency for reporting new

researches is the Yearbook entitled *Psychological Studies*, issued by the Psychological Institute of the University of Budapest.

### (2) MEDICAL AND EDUCATIONAL PSYCHOLOGY

Among the Magyar intelligentsia, the first impulses for the development of psychology came from clinical and scholastic sources, an historic fact which accounts for the marked practical character of the subject in this country. Its beginning is associated with the Budapest Psychiatric Clinic in which Ranschburg established his Psychophysical Laboratory in 1899. After a few years this became an officially independent institution, commissioned to carry on research in therapy for handicapped youth and related guidance functions. Until 1930 it was known as the Royal Hungarian Pedagogical and Psychological Laboratory; in 1935 it was reorganized as the Government Institute of Child Psychology under the headship of the physician-in-chief, Dr. Schnell. Its chief duty now is the provision of educational guidance to all public normal and auxiliary schools.

The earlier publications of this laboratory were concerned with tests of memory and attention and the investigation of reading and writing deficiencies. Professor Ranschburg became recognized throughout the world of psychology for his law of the inhibition of homogeneous conscious content, which is manifested in errors in reading, writing, and printing. The extensive discussions concerning this theory and the phenomena to which it relates were international in scope.

Activity in the fields of psychopathology and mental hygiene is marked at the Psychiatric Clinic of the University of Budapest under the leadership of Professor L. Benedek (referred to in Section 1 above). He and his pupils are chiefly concerned with the psychological phenomena involved in schizophrenia, paralysis, and general "nervousness"—findings which have been fruitfully applied in matters of brain localization. Benedek's German monograph on the psychic effects of insulin shock is one of the major contributions to this area.

Other medicropsychological issues have been attacked by Dr. L. Szondi, the head physician. His English work on the "Analysis of Marriages" opened the way to a series of new discoveries. Personal "affinities" reside in the genealogical equipment of the individuals concerned—to this fact he applies the term "genotropism," a phenomenon revealed both in free mating choices and other types of marriages. The testing of this theory of hereditary complexes

through a study of "sympathetic selections" is one of the chief occupations of his many students.

Among the psychoanalysts, the late K. Ferenczi was probably the most distinguished national representative, although I. Hermann (like Ferenczi, trained in the more classical forms of psychology) is a close second. Dozent Stefan Máday, now a disciple of Adler, earlier made his reputation through his critique of the extraordinary performances of horses reported by Krall.

The second oldest psychological institute in the country is the laboratory connected with the Pedagogical Seminary in the capital, founded by Professor E. Weszely. Its first director was L. von Nagy; its present one, Dozent L. Noszlopi. This body, limited in its activities to metropolitan Budapest, is concerned with the preparation of teachers, occupational guidance, and educational research among children. Its publications center about didactic problems in developmental psychology and issues connected with the measurement of intelligence among pupils.

With the aid of the Rockefeller Foundation, a University Institute of Experimental Pedagogy was founded in the provincial city of Szeged by Professor H. Várkonyi. The *Acta* of this university show that this institute has been exceptionally productive, notably in the practical and theoretical investigation of human intelligence and its functional manifestations. Dozent Stefan von Boda is the leader of the movement devoted to the study of the developmental phases of genius.

Applied psychology only is pursued in the two remaining provincial universities: at Pécs, Professor C. Bognár is occupied with the educational, and Professor J. Nagy with the philosophical, aspects of psychology; at Debrecen aesthetic and pedagogical papers appear under the leadership of Professor L. Mitrovits, and important studies in the psychology of religion under that of Professor E. Vasady.

### (3) ECONOMIC AND MILITARY APPLICATIONS

The medical and educational phases of "practical" psychology are not the only ones that have grown vigorously in Hungarian soil. The Hungarian Industrial Research Institute has a separate division of Economic Psychology which works hand in hand with the Psychological Institute of the University of Budapest. Studies on motivation in tobacco smoking, wine drinking, and fruit consumption have appeared, and more of this character are under way. During the post-war period a number of major private business corporations

introduced the practice of aptitude testing into their personnel work. Officials trained in this branch of psychology are connected with the world-renowned machine plant Ganz-Danubius, the Hungarian Woolen Industry, the Goldberger Textile Works, the Rubber Products Firm, and others.

There are three great Budapest institutes that constantly administer all sorts of employment tests, viz., the Social Insurance Board, the Communal Transportation Authority, and the Military Establishment.

The institute associated with the Social Security Board was founded by its Director, A. Bálint, and is distinguished for its efficient organization. In order to avoid accidents and premature invalidity, all youthful workers must be tested by law to see if they are suited for their craft before they are permitted to become apprentices. The fact that several hundred are tested daily will give some impression of the magnitude of the enterprise. Most of the testing follows the methods standardized by Moede with technically perfected modern apparatus in regular use.

The metropolitan traffic system tests all its motormen and conductors with devices originating in Germany, although several ingenious pieces of apparatus invented by the Director, L. Rittering, are also employed. This model transport workers' laboratory is one of the largest of its kind in Europe.

The Institute of Military Psychology is the largest and most recently established of all in the country and is said to excel all other European army organizations of this type. While its model predecessor in the German Reichswehr tests only specialists and candidates for officer status, this one does the same for noncommissioned ranks and all professional soldiers. In addition, all officers who are applicants for advanced training are subjected to tests of intelligence and general ability with considerable "top." In this connection, the Institute is doing pioneer service in determining the specific capacities and skills characteristic of the highest levels of intelligence. The written examinations make use of paradoxes, explanations of the "essentials" of situations, meditative thought problems, etc. Particular emphasis is given to the experimental investigation of character and personality traits on the basis of analyses of overt behavior. This institute also serves as a police testing bureau. Several provincial branches are now being established. The founder of this laboratory is Colonel K. von Csetey; a special personnel bureau for civil aviation is under the leadership of Dr. Scholtz.

#### (4) FACILITIES FOR TRAINING AND RESEARCH

Extensively and intensively, Hungarian psychology gives evidence of versatility and a fairly flourishing condition. One exception must be made—the personal career of an applied psychologist is still a very uncertain one, even though medical, pedagogical, and industrial psychology are relatively the most developed specialties. The "Applied Section" of the Psychological Association will undoubtedly exercise a beneficial effect on this situation as soon as the desired objective of unified or common programs of instruction is achieved. It must also be emphasized that all teaching and research activities in Hungary are relatively poorly financed. Quantitatively, general psychology is underrepresented in the total picture, but this is a limitation that will sooner or later be corrected.

Preparation for a career in psychology is presided over by the Ministry of Public Education and the Psychological Association, whose Applied Section is concerned with developing standards for industrial, commercial, and academic courses, and also makes provision for a general lecture series. In this work, the universities and the theological and pedagogical seminaries coöperate.

The Psychological Laboratory within the philosophical faculty of the University of Budapest is the sole purely "theoretical" institute in the country exclusively devoted to instruction and research. After an abortive start during the World War under the inspiration of Professor Géza Révész, the Institute was actually founded in 1932 with the aid of Professors A. J. Paurer, L. Kornis, and Baron B. v. Brandenstein, all philosophers. In the interest of all-round professional equipment, demonstrations and lectures are given in connection with the psychiatric department and the Biological Institute at the Balaton. Widely separated areas, like the study of twins and marketing research, are thus combined. Most of the research is motivated by a theory of action-psychology which is influenced by both the Gestalt and behaviorist trends. Motor as well as thought processes are viewed as the realization of basic urges. Problems thus approached are dealt with distinctively, no matter whether the subject of inquiry be the play of children and adults, attitudes toward death or dreams, or the solution of riddles. The elaboration (transformation) of motives is central among the research objectives of this school of thought.

## (5) REPRESENTATIVE PSYCHOLOGISTS AND THEIR WORKS

The major sphere of activity of a number of distinguished Hungarian psychologists has lain outside their own country. The eminent sensory physiologist, Julius Pikler, publishes exclusively in German. Professor Géza Révész, editor of *Acta Psychologica*, has long been known as a resident of Amsterdam. The foreign service of Angyal, Hirsch, Kardos, Katona, Juhász, and Székely has brought them into prominence elsewhere. However, there are a substantial number of Hungarian psychologists whose chief research work has recently appeared in Magyar alone. Among these may be mentioned (alphabetically):

Dr. Stefan von Boda, *Introduction to psychology*, 1934: a theoretical sketch designed to clarify the basic issues in psychology on the basis of his own researches in the thought processes.

Professor Cecil Bognár, *Psychology*, 1935: a presentation unifying the "older" and "newer" psychology in textbook style.

Baron Béla von Brandenstein, *Man in the universe*, Volumes I-IV, 1937: a philosophical anthropology; the third volume is a synthesis of contemporary psychological schools.

Michael Erdélyi, *Foundations of psychotechnics*, 1935: a discussion of the principal problems and possibilities of applied psychology.

Professor Julius Kornis, *Mental life*, Volumes I-III, 1917-1919: a detailed and critical exposition of empirical psychology; much used as a reference and text. His "Politician," a discussion of social psychology, has recently appeared in a French version.

Professor Paul Ranschburg, *The human mind*, Volumes I and II, 1923: a thorough treatment of physiological and pathological psychology, supported primarily by his own experiments; much used to acquaint native students with precision in methodology. His lectures on medical psychology in the Medical Faculty of the University of Budapest are well known.

Paul von Schiller de Harka, *Psychology and the understanding of human nature*, 1934: a condensed systematic presentation of theoretical and applied psychology from the dynamic viewpoint. Also, *The problems of psychology*, 1939: an historical sketch of the shift in psychological objectives on the basis of a general theory of behavior. [Dr. Schiller is Dozent in the University of Budapest, director of its Psychological Laboratory, head of the section of Applied Psychology in the Hungarian Psychological Association, and co-founder of the National Institute of Military Psychology connected with the Hungarian Ministry of War.  
—G.W.H.]

Hildebrand Várkonyi, *Introduction to educational psychology*, 1938; and *The child*, 1938, first volume of a child psychology. Both are important for their analyses of the theories of modern pedagogy.

This account of the status of psychology in Hungary today is intentionally restricted to a survey of the personalities and institutions actively representing the science. No attempt has here been made to report the distinctive experimental papers as these are generally adequately reported after some inevitable delay in the *Psychological Abstracts*. However meager may be this sketch of the forces which make Hungarian psychology what it is, it should serve as a conceptual framework to which one's eventual acquaintance with some original Magyar study may be referred.<sup>1</sup>

<sup>1</sup> This account was written in August, 1939, but the dramatic military and diplomatic events of the past year of war in Europe have left Hungary relatively untouched, at least until now. History moves at a fast pace these days, and many reports are obsolete by the time they arrive in print. Save for this contingency, the present description remains applicable to the current scene of late 1940.

## POSSIBLE EXPLANATIONS OF TWO "INEXPLICABLE" ESP EXPERIMENTS

BY STEUART HENDERSON BRITT

*The George Washington University*

In his thorough review of experimental work on extra-sensory perception, Kennedy (1) shows how the majority of ESP experiments may be explicable by such unnoticed errors in methodology as selection of data, lack of independent record, sensory cues, "mental" habits, and logical inference. Of all the experiments analyzed, only two are discussed "as being as yet inexplicable"—those by Warner (4) and by Riess (2).<sup>1</sup>

(1) However, Kennedy suggests that possible explanations of the Warner data are, first, "the non-random distribution of frequencies of the card symbols" (p. 94), and, second, the "possibility of variation in duration of the light signal serving as an unnoticed cue to the recorder" (p. 94). A third factor should also be noted, namely, that Warner's report was based on 250 trials—that is, on *only* 10 "runs" through the deck. Such a brief series of runs cannot justify any positive conclusions. Any bridge- or poker-player knows that he may occasionally have a series of 10 or more good hands, and not for any "extra-sensory" reasons! These three factors together seem sufficient to remove the Warner experiment from the classification of "inexplicable."

(2) What about the Riess experiment? His report was based on a series of 1850 trials—that is, 74 "runs" through the deck—said to have been made by a young woman 26 years of age while in her home, located approximately one-quarter of a mile away from the home of the experimenter, who turned the cards. Riess reports 1349 correct guesses, which is an average of over 18 correct calls per 25 cards for the entire series! At the time of the 1938 symposium on ESP, held at Columbus, this was approximately *twice* as high as the next highest average reported in ESP work (cf. 5, graphs 2 and 3). In fact, Kennedy said in his review: "Since the high scores reported in this experiment are so much at variance with the majority of ESP results, a full determination of the conditions under which the unusual results occur would seem to be of paramount importance" (p. 95). Riess has since published a supplementary report of when and how his checkup for number of "hits" was made (3).

In his first article Riess stated that "the young lady moved to the Middle West and has since refused to participate further in the experiment" (2, p. 261); and later he has said that "she has since, unfor-

<sup>1</sup> Dr. John L. Kennedy has read the present paper, and approves of it as a supplementary report to his review.

tunately, disappeared into the Middle West and at present is not available for further work" (5, p. 270).

Since a complete explanation of his experimental results would require some account from the subject herself as to the methods she employed in calling the cards and recording the guesses, I asked Dr. Riess in 1939 to give me the name and last mailing address of his subject. However, a registered letter sent to this name and address (in Muncie, Indiana) was returned as undeliverable; and Dr. Riess informed me that he, too, was unable to get in contact with his subject again.

Because the exact address of the subject *at the time of the experiment* might be helpful in obtaining a forwarding address, I then asked Dr. Riess for the name and address of the parents of the subject. "Since both the subject and the experimenter lived in the same suburb of New York City," and since "the distance between the two homes was approximately one-quarter mile" (2, p. 261), this seemed a reasonable request. However, Dr. Riess replied: "At the time of his daughter's disappearance both parents were much distressed and made me promise to let no one know their names or addresses. . . . This information unfortunately cannot be made available."

Yet without some report from Dr. Riess's subject concerning her method of calling and recording, his experiment should not be classed as "inexplicable." Kennedy has said of the supposedly "inexplicable" experiments: "The experiments should be conducted under such conditions and auspices that the *subject* [italics mine] cannot be suspected of fraudulently producing the results. This rule would probably involve independent testing of the same 'good' subject in different laboratories" (p. 98). Independent testing is, of course, impossible with a subject who is said to have disappeared.

#### SUMMARY

Possible explanations are offered of the two ESP experiments which have been discussed as "inexplicable." (1) The high scores in the Warner data may be due to the non-random distribution of frequencies of the cards, the possibility of an unnoticed cue to the recorder, and the extremely small number of runs. (2) The Riess experiment should not be called "inexplicable" in the absence of some account by the subject (disappeared) of the methods employed in calling the cards and recording the guesses, and without independent testing of the subject by other experimenters.

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## BOOK REVIEWS

HILGARD, E. R., & MARQUIS, D. G. *Conditioning and learning*. New York: Appleton-Century, 1940. Pp. xi+429.

During the last ten or fifteen years an ever-increasing amount of experimental research has been done in the field of conditioning. But apparently those actively engaged in the work have lacked either the time or the courage to try to organize the growing body of facts and interpretations in a thorough fashion. True, there have been a number of partial summaries. Perhaps the most ambitious of these was Hull's chapter in *The handbook of general experimental psychology*, which appeared in 1934. But there has been no critical summary, of book length, of the general field of conditioning. When it became generally known that Hilgard and Marquis were writing such a summary, its appearance was eagerly anticipated. Each of the authors had already made a number of significant contributions, both of fact and theory, to the field. Indeed, one of them received the Warren Medal for certain of his contributions. Finally, after several years of collaboration, the book was completed. To what extent does it meet the expectations of those who looked forward to its publication?

Anyone who expected a brilliant new systematization of the field will be seriously disappointed. There are flashes of insight throughout the book, but the reader who is familiar with the literature will probably have met most of them before—if nowhere else, at least in the previous publications of the authors. But, on the other hand, one who looked for a compendious handbook will be almost as badly disappointed. The job of listing and summarizing every point that anyone has ever investigated in the field would probably have been an impossible and thankless job. But he who expected a good, straightforward summary and discussion of the more important material, organized in topical form, will be delighted with the book.

The authors do not pretend to give the last word on very many of the topics. Rather, they have taken for their task the presentation and evaluation of relevant experimental material on each of their subjects, indicating the gaps in our knowledge when they exist. It is, therefore, a conservative book, but one that should be most useful. It should serve as an excellent method of review for one who is familiar with the literature. Perhaps it will be even more useful as an introduction for serious students entering the field. The reviewer can think of a no more interesting course to teach than a seminar in which advanced students took up the book, chapter by chapter, and discussed the points brought up by the authors. Particularly valuable for such students would be the extensive notes and references at the end of each chapter, so arranged that they serve as a handy key to the literature. Other useful features are a glossary and an

ingenious combination of author index and bibliography (973 items). The subject index is less adequate.

The book is written in a clear and readable style and suffers from none of the faults that sometimes result from joint authorship. Although each author was responsible for certain chapters, the reviewer could not tell where one left off and the other started. The various portions are surprisingly free from inconsistencies and contradictions.

The title, *Conditioning and learning*, suffers from condensation. It might describe the contents better if it were expanded to *Conditioning and its relationship to learning and certain other forms of behavior*. The scope of the book can best be understood from a perusal of its contents. The importance of the subject matter makes it seem advisable to take it up chapter by chapter.

The book starts with a most interesting discussion of the place of conditioning in psychology. It makes clear and vivid the developments in psychology and biology that prepared the way for conditioning, and then continues through the rapid spread of interest in the subject after Watson, and the great expansion of research during the decade 1926-1936. At this point the authors come nearer to an error of fact than anywhere else in the book. One paragraph seems to say that the early work of Liddell, Kleitman and Crisler, Upton, and the reviewer followed the appearance of Pavlov's 1927 translation. A careful examination of the dates given in the paragraph shows clearly that the authors probably did not mean this. But the reviewer, who worked on conditioning during these years, combing English, French, and German sources, only to find them repetitive and incomplete, may be pardoned a slight amount of irritation at even the hint that the long-awaited Pavlov translation appeared before the reviewer's thesis had gone through its first draft! But let us return to the chapter. The last portion of it treats briefly the following five views of the place of the conditioning experiment in learning: (1) a substitute for association; (2) the unit of habit; (3) representative of other forms of learning; (4) a source of deductive principles; and (5) a subordinate and restricted form of learning. The reviewer feels that these distinctions are of considerable importance and are all too frequently neglected.

The second chapter is devoted to a general summary of the basic experiments and phenomena of classical conditioning. There is, in addition, a description of the nature of the conditioned response, in which the authors point out that it may be redintegrative, fractional component, preparatory, or even an example of sensitization. This chapter alone should be enough to convince anyone that conditioning is not a simple process. The following chapter introduces still more complications, for it is concerned with instrumental or operant conditioning experiments. In this type of conditioning the reinforcement occurs only if the animal makes the conditioned response. A clear distinction is made between reward training, escape training, avoidance training, and secondary reward (token, "sub-goal") training. The closing portions of the chapter are concerned with a comparison of classical and instrumental conditioning. Here the authors bring up the question of the nature of

reinforcement, which is continued through the fourth chapter. They start with an admittedly circular definition: "The reinforcement is identified by the fact that when it is present on successive training trials, the conditioned response increases in strength; when it is omitted, the conditioned response decreases in strength: i.e., it is extinguished" (p. 69). They then point out and discuss three principles of reinforcement: substitution, effect, and expectancy. Their discussion of this, perhaps the central problem of learning, is the most incisive in the whole book. After a sympathetic treatment of each of the principles, they show that each is abstracted from one particular type of learning situation. They suggest that it is possible to retain all three principles and that more than one of them may operate in any specific learning experiment. The reviewer is heartily in favor of this suggestion and would add another: "Don't use the word 'reinforcement' as if it meant a single process." In later portions of the book (and throughout the literature) this caution would clarify discussions considerably. Indeed, many explanations of specific results are successful only because of an ambiguous use of the word "reinforcement."

A chapter entitled "Experimental Extinction" naturally follows. In it the authors treat at some length the processes of "Adaptation" and "Interference," which correspond roughly to intrinsic or internal, and extrinsic or external, inhibition. Interference alone will not explain extinction, for adaptation seems necessary "to account for the rapidity of spontaneous recovery, the more rapid extinction with massed repetitions, and the differential effect of certain drugs upon extinction and conditioning" (p. 120). They also summarize the other familiar manifestation of inhibition, as in punishment, delay, disinhibition, etc. The notes at the end of this chapter are particularly full.

The next three chapters concern certain aspects of conditioning, rather than the fundamental process. In the first, after making a valuable distinction between the strength of the response (measurable) and the strength of conditioning (inferred), the authors show the effect on strength of such variables as age, species, intensity of stimuli, and of repetition. The next chapter (one of the best in the book) analyzes the effect of temporal and spatial relations among the stimuli as six different gradients. The third chapter of this group treats gradients among stimuli and responses, or generalization and discrimination. There is an especially good discussion of the problem of similarity. The changes on the response side are badly neglected here, but some discussion of them appears elsewhere. The reviewer has been accustomed to think of the development of sharp, precise responses out of a generalized movement as quite comparable to discrimination on the sensory side.

In the next two chapters the authors consider the relation of conditioning to serial learning. They point out that there are two problems involved in the explanatory use of conditioning, a systematic and a practical one. They feel that it is too early to evaluate an attempt (like Hull's) to systematize theory to include all that is known about learning. In regard to the practical problem, they are more decided. By numerous examples they point out "the futility of expecting conditioning principles

(or other systematic principles of learning) to take the place in practical situations of analyses made within whatever concrete situation is under consideration" (p. 252).

The authors maintain a high level throughout their next two chapters, "Voluntary Action" and "Personality." One might quibble with an occasional point, such as their statement that "the finger withdrawal to shock is not a reflex in the sense of the flexion reflex" (p. 269). But such a point is trivial after a clear-cut statement like the following: "Conditioned responses may fall at any point along the involuntary-voluntary scale, depending upon the particular experimental situation in which they are established. The criterion of location on this scale must be the same as for any other variety of response: the extent to which instructions, sets, and attitudes affect the incidence, magnitude, and qualitative characteristics of the response" (p. 259). At only one point do they seem to bog down. They say (p. 276): "To discover that self-instructions may serve as conditioned stimuli for all manner of behavior (including that which is peculiarly reflex) does not yet account for the origin and organization of self-instructions." This would seem to be straining at a gnat, for conditioning explains self-instruction at least as easily as it does most other things.

The final chapter is on the neurophysical mechanisms of conditioning. The authors start with the clearest exposition of Pavlov's theory the reviewer has ever seen. After criticizing the theory, they consider the anatomical locus of conditioning, stressing the concept of encephalization. They next discuss the functional components of the conditioning mechanism and tend to localize the change at an association pathway. This leads to a consideration of theories of neural—especially synaptic—change, in which they bring together a considerable number of theories, but find them inadequate. This portion of the discussion suffers somewhat from atomism, as the authors themselves realize. They make some defense of their position. At the end of the chapter they make clear that the validity of the concept of inhibition at the behavioral level does not rest on any particular theory of the neural mechanism. The psychologist and the neurophysiologist have separate, but not unrelated, jobs to perform.

When one puts down the book, he lacks a feeling of "closure." The reader should blame the subject for this, and not the authors. He should be grateful to them for a clear, stimulating exposition of what we already know about conditioning and related topics.

HAROLD SCHLOSBERG.

*Brown University.*

GRAY, L. H. *Foundations of language*. New York: Macmillan, 1939.  
Pp. xv+530.

Because of the inherent importance of linguistic phenomena and psychologists' growing interest in language, we must welcome this well-made addition to the literature of the subject, even if the organization and treatment are similar to other recent volumes of the same class. Too long have psychologists neglected such important and pervasive phe-

nomena as linguistic behavior. Even when they occupy themselves with such data as the number and classification of words the infant utters, the time of origin and order of such performances, sentence development, the character of children's conversations, etc., the most outstanding result is the lack of understanding of the nature of language. Although psychologists may not be able to achieve such understanding from the present volume, a careful reading of it is well worth while if only because it serves to emphasize the importance of sound psycholinguistic theory.

It is Professor Gray's intention to present in this single volume "an encyclopedic compendium of linguistics" and at the same time "an introduction to Indo-European linguistics as a whole." The thirteen chapters cover: (a) the general nature of language (32 pages), including its relation to thought (26 pages) and society (28 pages); (b) the more specific treatment of the conventional topics of phonology (42 pages), morphology (78 pages), syntax (24 pages), semantics (27 pages), and etymology (17 pages); (c) the classification of languages (122 pages); and (d) the history of the study of language (41 pages).

The author's technical approach is historical.

"Linguistic method must be essentially historical in its assemblage of material, which it must gather with the utmost fullness possible, and without preconceived theories" (p. 1).

This statement gives us not only a key to the present work, but also a cue to the author's linguistic views. For him the materials of language consist primarily of things, texts. Accordingly, he stresses the origin, development, and degeneration of languages, and regards etymology as central to linguistics. This is true even if much of the material is *reconstructed*, really constructed or invented. Consequently, this volume is replete with protolanguages and with protoforms which are presumed to become modified for the better and for the worse.

The historical linguist analyzes language into words. Word-things are made up of bases and inflexions with or without determinatives (pp. 159, 287). Like all linguistic textualists, Professor Gray also asserts that "phonology is the very foundation of all scientific linguistics" (p. 83). For it is apparent that phonology has always seemed to be the most substantial feature of language. Despite Professor Gray's frequent assertion that "we are dealing with sounds not with letters" (pp. 283, 432, 438), we cannot escape the conclusion that the historical linguist is only rationalizing in the absence of the actual speech behavior which he thinks he is tracing out through millennia. Who would undertake the reproduction of the sounds uttered by a Roman or an Athenian? How strongly influenced the author is by the word-thing conception is clear from his definition of the verb "as a word characterized by inflection, if inflected at all, for person" (p. 178).

Students of language will immediately trace this book back to the root linguistics of the past century. Some of the consequences of this word-thing view are revealed in the declaration: "Originally there were neither nouns nor adjectives but only descriptive words" (p. 169). Again, he declares that linguistic evidence justifies the inference that ". . . the personal pronoun is the most primitive of all the parts of

speech, earlier even than the epithetologue (noun-adjective); and that of these pronouns, the one for the first person was the earliest" (p. 177). The last paragraph of his chapter on parts of speech ends with the declaration: ". . . all the parts of speech have developed from a single source" (p. 178).

The study of words is not only legitimate but fascinating. Whoever likes may treat language as texts or word-things. But this is a general linguistic treatise, and from such a treatise we have a right to expect a more comprehensive view than that founded upon a single aspect of linguistic phenomena. This proposition is not unrealized by the author, who appears troubled by it. It cannot be denied that Professor Gray acknowledges language to be action, behavior, and even adjustments, though it turns out that these are no more than casual remarks. For example, in defining language (p. 13) he stresses vocal-auditory phenomena and even admits that gestures and signals may be language. Again, in discussing the relation of the linguist and the littérateur (p. 142) he asserts that language should not be treated as merely a cadaver for linguistic dissection, though here, too, he reminds the literary scholar that language has a material, almost a legalistic, element. Ultimately, however, the textual view prevails.

Considered as an exposition of historical or textual linguistics, this is a learned and competent book. Errors and omissions are not excessive. Did Leibniz's *Nouveaux essais* wait until 1886 to be published? Why not cite Jensen's *Die Schrift in Vergangenheit und Gegenwart* instead of its predecessor of a decade before? Is a verb the sole part of speech that can form a complete sentence? Cannot the assertive function be performed by any part of speech? Is the nominal the only verbless sentence? Nor need we stress such paradoxes as a progressive treatise still building upon Dionysios Thrax or injecting judgments of correctness and propriety into scientific descriptions. There is another story altogether when we evaluate the volume as an exposition of the foundations of language.

Can general linguistics dispense with the theory that language constitutes specific adjustments of individuals? This point the linguist concedes when he distinguishes between *le langage* (faculty), *la langue* (language system, e.g. English, French, etc.), and *la parole* (speech—that is, activities of individuals). This triplication of language makes room for language as actual psychological adjustments, but the question is whether the linguist actually deals with such phenomena or in the final reckoning clings to word-things. Even if the conventional linguist does not deal with actual linguistic events, there is some merit in at least allowing for their occurrence.

Professor Gray, however, goes further. In the chapter on "Language and Thought: The Mental Aspect of Language," he asserts:

"One of the most urgent needs of the science of language today is a thorough treatment of linguistic psychology" (p. 93).

Again, he says:

"Language and psychology are inherently connected, and some knowledge of psychology must be presupposed in any real study of the principles of

language. Indeed, two of the great divisions of language—syntax (the relation of words to each other) and semantics (the development of the meaning of words)—are psychological in nature" (p. 8).

In view of these quotations one questions why actual linguistic adjustments are not treated and treated adequately. The answer lies in Professor Gray's psychology.

Underlying this book is the venerable expression-ideology according to which language is a "means of expressing emotional or mental concepts" (p. 13). According to Professor Gray:

"Language is essentially symbolic; i.e., it is a physical and external manifestation of a non-physical (emotional, intellectual, spiritual) and internal state, and an endeavor to represent materially what is essentially immaterial" (p. 15).

In consonance with this ideology the author adopts the most blatant phrenological doctrine which is not inconsistent with his ideas referred to above. He reproduces a 1914 French anatomical drawing of a head with exposed brain, replete with indicated sensory, motor, and language centers, and arrows showing "audition, passing from ear to auditory sensory-centre," "written or printed word, passing from eye to visual sensory-centre," and "phonation, passing from articulate language-centre to motor language-centre, then to mouth."

In the wake of this formulation we have only to expect that primitive languages bespeak "absence of power of abstract thought" (p. 22), and in general an abundance of illustrations of the translation fallacy. An example of the latter is supplied in the analysis of the Aranta sentence meaning:

" . . . 'that man there, who returned yesterday, beat the boy' (*atua nala nana tmurka albuka worana tukala* 'man that there yesterday returned boy beat') : 'beating-more (*atua*) existing-going-in (*nala*) existing-existing (*nana*) yesterday-cutting-off (*tmurka*) returning-cutting-off (*albuka*) boy-being (*worana*) beating-cutting-off-going-in (*tukala*)'" (pp. 154-155).

This is, of course, a consequence of the concept-expression theory. The alternative description would be that the Aranta speakers adjust themselves to similar stimulative objects—the man, the boy, and what happened between them—with different response patterns. It is only on the basis of the traditional psychic-expression theory that one would interpret the Russian, for example, as lacking or suppressing concepts when he says "*on general*" instead of "*he is a general*."

When the science of general linguistics as over against text study is in question, it may not be unfair to conclude that a satisfactory treatise will be possible only when a more adequate psychological position is first attained.

J. R. KANTOR.

Indiana University.

GOLDSTEIN, K. The organism: a holistic approach to biology derived from pathological data in man. (With a Foreword by K. S. Lashley.) New York: American Book, 1939. Pp. xvii+533.

This book deserves to be read by every psychologist. Dr. Goldstein has presented a comprehensive philosophy of the organism and its place

in the universe. It is not easy reading, as his English prose remains largely Germanic in structure, and he has spared the reader nothing in dealing minutely and thoroughly with the most difficult aspects of his subject. The result is a book that must be read slowly and closely, but one that will repay the effort spent upon it.

Goldstein's position is that of "holism." It is an anti-atomistic, anti-partitive approach which insists that the organism can only be understood as a functioning whole, and that any attempt to isolate part phenomena within the totality results in an artificial situation which will mislead rather than instruct us concerning the nature of the normal organism. Behavior is always total behavior. It exists in, and must be understood in, the light of the complete pattern of the organism. Moreover, the organism in turn exists in an environment and must be understood as part of the larger pattern of the universe. Good behavior is behavior by which "the organism actualizes itself, according to its nature, in the best way." If this self-actualization is attained, the organism, viewed independently, attains perfection. Viewed in the light of the entirety of nature, however, the individual creature as such is imperfect. It can exist "only as being within the whole, only by support of the whole."

The extreme holism of Goldstein's position is seen clearly in his criticism of Gestalt, which he condemns because it deals too exclusively with tension and balance *within* the figure. The figure must be understood not merely in terms of its own internal forces but in terms of the larger configural forces within which it, too, exists. Carried to extremes, this would demand that the entire universe be considered in dealing with any partitive phenomenon. Goldstein realizes the impossibility of this and admits the practical necessity in science of dealing with some sort of partitive phenomena on an analytic basis, but he will have none of the analytic units of classical and contemporary physiology.

The concept of the reflex comes in for particular attack. Goldstein claims that isolated reflexes revealing stable and unvaried characteristics appear only in abnormal conditions of the organism or the environment. The usual laboratory setting for investigating the conditioned response would be classed as a definitely abnormal environment. Such studies would never lead us to accurate understanding of the normal organism functioning in a normal environment. The criticisms of the reflex concept are penetrating and timely, but many psychologists will fail to find them devastating. His "reflex" is largely a straw man. It is not the complex phenomenon that our experimental laboratories are investigating, but, rather, the naïve concept which has permeated the introductory textbooks and the thinking of the man in the street.

Moreover, the partitive concepts of current nonholistic physiology are not so complete a failure as Goldstein makes out. One might well contrast the vagueness and generality of his holistic discussion of reversal in reflex action with Cannon's precise and detailed humoral explanation of such phenomena.

Because of the holistic paradox of denying the suitability of partitive concepts while admitting the necessity of using them, and because

Goldstein has nothing better to offer for the reflexes he so bitterly denounces, the tone of the book is critical rather than constructive, negative rather than positive. Yet the argument is stimulating and suggestive, particularly since it is backed by wide clinical experience and a broad cultural viewpoint. Not many American psychologists will agree with Dr. Goldstein's position, but all of them could study it with profit.

WILLIAM A. HUNT.

*Wheaton College.*

TIFFIN, J., KNIGHT, F. B., & JOSEY, C. C. *The psychology of normal people.* Boston: Heath, 1940. Pp. xv+512.

"This book is written for students who expect their four years at college to prepare them for acceptable service in business, industry, and the professions. . . . The authors have taken advantage of deliberate counsel with superintendents of steel mills who hire young engineers; with personnel managers of large department stores who buy, in young graduates, psychological training received in college; with resident physicians in large hospitals who use young psychological clinicians; and with superintendents of schools who search for English and social science teachers possessing insight into human nature as well as mastery of their subjects" (Preface).

The result is a book which appears to make a studious attempt to avoid such terms as "law," "theory," or "principle" as well as all controversial topics—a book in which much material, which has by long custom been accepted as sound and basic for a course of psychology, is diluted, ignored, or omitted. Specifically, discussion of sensory processes is limited to but twelve pages; there is no discussion of visual or auditory theory; the term instinct, though criticized briefly for its lack of explanatory value, is used to refer to "inherited drives" from which spring "the strivings of man" and, again, as "merely a word for behavior that is universal and that does not need to be learned" (pp. 35, 36); experimental studies of motivation are omitted, and the term motive is employed with two meanings, as "only a way of acting" and as that which causes one to act and think as he does (pp. 36, 37); there is no discussion of the experimental methods of learning and forgetting and no description of the construction or nature of curves of learning and retention (the Bryan and Harter curves and the Ebbinghaus curve of forgetting are pictured); no laws of learning are mentioned save the law of effect, which is mentioned in one sentence: "This tendency in our behavior to repeat the pleasant and eliminate the unpleasant is known as the *law of effect*" (p. 216); there is no description of the methods of measuring retention save those of automatic writing, crystal gazing, hypnosis, and psychoanalysis; no mention is made of the concept of retroactive inhibition; there is no formal discussion of laws of association; there is little, save brief mention of Lashley and others, on the nervous system.

To be sure, many facts related to the above concepts are given. The student, however, might read this book and find a number of interesting and entertaining illustrations drawn from very specific and concrete situations, but would not learn that psychology had made any attempt to

encompass these details by means of major principles, theories, or laws.

The value of any textbook written to serve as a handmaiden to success in its own as well as other fields must be determined on the basis of its transfer value. The present text seems to have been written on the theory that greatest transfer is to be obtained from psychology if it is presented in terms of specific and concrete facts rather than in terms of the general and fundamental principles that are the stock in trade of psychology.

R. H. WATERS.

*University of Arkansas.*

PRESSEY, S. L., JANNEY, J. E., & KUHLEN, R. G. *Life: a psychological survey.* New York: Harper, 1939. Pp. xxxiii+654.

JANNEY, J. E. *Laboratory workbook in psychology and Instructor's manual* (to accompany *Life: a psychological survey*, by S. L. Pressey, J. E. Janney, & R. G. Kuhlen). New York: Harper, 1939. Pp. 154; pp. iv+32.

This textbook marks another step in the gradual change of emphasis in psychological texts from the study of man as a complexity of faculties, abilities, or responses to the study of persons living in a human environment. Certainly, in this text the faculty approach to psychology, under whatever name it may be cloaked, is left far behind. It is also in accord with the growing tendency to stress statistical data almost to the exclusion of data derived from experimental psychology of the laboratory sort. Such texts mark a growing distinction in psychological study between the biological and experimental aspects on the one hand and the personal and social on the other. Not that such an approach is in any sense opposed to laboratory experimentation, but, rather, it supplements it by studies of the statistical type.

This change may be said to have resulted largely from the growing demand for an introductory psychology based upon dependable data which will contribute to an understanding of ourselves and others as persons and which will aid us in making a better adjustment to the perplexing world in which we live. There is ample evidence on every hand to show that such a demand is neither to be discredited nor lightly rejected. A knowledge of human incentives, interests, values, and adjustment would appear to be more urgent for the average student of psychology at the present time than a knowledge of reflex arcs, sensory and perceptual phenomena, maze learning, and general intelligence. It is fitting that the first texts of this type should appear in the United States, where by far the largest number of significant studies of the sort required have been carried out.

Like all Sidney L. Pressey productions, the book is highly informative and emphasizes factual data rather than theoretical accretions. Dr. Pressey has demonstrated on many occasions his unusual ability to combine into a coherent picture a mass of diversified data taken from many sources. This is one of his most ambitious attempts in that direction. The presence of 189 tables, graphs, and figures, in addition to thirteen selected bibliographies of from forty to eighty-three titles each, indicates

the scope of the work carried out by Dr. Pressey and his associates. On the whole, the selection, editing, and combining of the studies have been well done, and the result is much more concordant than one would expect from the range of the subject matter. The form of presentation is consistently interesting and intelligible.

The first section of the book, covering about 120 pages, is entitled "Conditions and Circumstances of Life." In it are described not only the physical, economic, and social conditions and circumstances most powerful in affecting human development and conduct, but also the customs, codes of conduct, ideas, and ideals which are an important part of the total environment in which the human being lives. As the authors state, "such a broad overview of human environment would seem essential for understanding human development and human problems." The section includes many charts and tables of factual data concerning population, marriage, occupations, economic status, education, and culture.

Part II, covering some 360 pages, deals with "Development Through the Life Span," from childhood to old age. Here are presented many interesting and significant data concerning physical and mental growth and decline, the course of social and vocational life, the development and change of interests, attitudes, character, and life philosophy.

Part III, covering about 135 pages, is entitled "Problems of Life." The preceding section having ended with a chapter on the individual, this section follows with a consideration of matters concerning efficiency, incentives, emotional adjustment, life plans, and the development of a point of view.

There is much that has practical value throughout the various parts of the book. Not only do the authors make practical suggestions on many topics, but, in addition, the selection of material throughout stresses useful information rather than psychological explanation.

According to the Index, an unusual amount of space is devoted to such topics as adjustment, adolescents, adults, attitudes, children, college students, social life, and work. Absent from the Index are such conventional topics as attention, conditioning, insight, memory and remembering, nervous system, perception, recall, reasoning, reflex, sensation, science, and trial and error learning.

While avoiding any theoretical controversy, this text marks about as radical a change in psychological textbooks as did Watson's *Psychology from the standpoint of a behaviorist*. It will not arouse much controversy because it is so definitely factual in content, but its wide adoption as a text for introductory classes in psychology will have a definite influence upon psychological instruction. Of late there have been indications of a growing tendency to commence the study of psychology from the level of the student's own experience of people and of the social world in which he lives rather than with the more remote neurological and experimental approach. This has been occasioned to some extent by the impossibility of providing laboratory accommodation for large introductory classes. This text fosters this tendency; its chief value, however, is its informativeness with regard to a broader psychological perspective.

Accompanying the text is the *Laboratory workbook in psychology*, by J. Elliott Janney. Many of the exercises are, to say the least, unconventional in form and content. It should prove a stimulating supplement to the text for classroom purposes. The manual, however, has significance in its own right because of the many interesting suggestions it contains concerning studies of social and personal phenomena which the student can carry out for himself.

S. N. F. CHANT.

*University of Toronto.*

WALTON, A. *The new techniques for supervisors and foremen.* New York: McGraw-Hill, 1940. Pp. vi+233.

The key to a proper evaluation of Walton's contribution is to be found in the fact that he spent twenty-five years working as industrial engineer before undertaking the graduate work in psychology which culminated in his receiving a doctorate from Stanford. His long practical experience lends a distinctive flavor to his writing, and one feels that his point of view is always basically that of the engineer. Although this leads him to rush brusquely in where academic angels may fear to tread, it also lends a freshness to his attack which is noteworthy. When he attempts to write as a psychologist, his steps are labored, his interpretation of psychological principles is naïve, and the boundaries of his knowledge of the literature are all too clearly indicated. When he writes as an engineer, however, the richness of his experience and the keenness of his analyses more than make up for the shortcomings of the other section.

The volume opens with four chapters which attempt to lay a psychological background for the later sections of the book. These chapters represent uncritical attempts to present a general introduction to the topics of motivation, aptitude, and the nature of psychological tests. It is not improbable that many readers will receive from them an impression so unfavorable as to lead them to neglect the stimulating and important later chapters of the book. The author explains that he is not writing for his professional colleagues, but that he wishes to produce a 'laymen's document.' If this is the case, there are many who will regret the author's emphasis on the possibilities of psychological research involving a single variable and his overenthusiastic view of what psychology can contribute at the present time. There is likely to be little enthusiasm for his thesis that "there are three different ways of responding to life's situations—with action, with emotion, with words," which presents Grant as a man of action, Washington as a man of emotion, and Coolidge as a man of words. His treatment of intelligence is not improved by his statement that "congenital idiots are born without any," nor is his presentation of aptitudes strengthened by his insistence that "they all start from zero at birth."

If the level of these first chapters, however, leads psychologists to abandon the book at this point, the loss is theirs. Having made his awkward bow to certain of the sacred white elephants in his newly adopted field, the author turns his back on them and begins to write as a thoughtful analyst who has been keenly aware of the social interactions involved during his quarter of a century in industrial environments.

Since he is writing for the layman, the author has not deemed it desirable to document his references and, indeed, citations of formal research are less important in his scheme than critical analyses of specific examples. Once he is in these chapters, however, the exposition is always coherent, and unifying principles are always invoked to make the presentation coherent.

The chapters dealing with the uses of tests present a brief survey of the employment of tests in industry. Although psychologists may regret the lack of reference to the use of non-test predictors, they will welcome Walton's treatment of tests as 'secondary filters' in specific industrial situations. Chapter 8, dealing with "Resistance to Change," presents the author's most significant contribution and one which is to provide the basic thread for the balance of the book. The author thoughtfully introduces the 'gyroscopic action of custom' in attempting to analyze recent events in Europe as well as in industry. Those who are acquainted with current researches in industrial psychology will recognize here a stimulating hypothesis to explain some of the influence now traceable to informal social organizations among the workers. This reviewer believes that there are few social psychologists who would fail to find this exposition of considerable interest.

A brief chapter on "Psychology and Scientific Management" reflects the depth of experience that the author has had in this field and indicates the very important changes that have occurred as the simple speed-up of Taylor has gradually been replaced by a system which involves a realization of the weakness of financial incentives unsupported by a grasp of the social integration of the worker. Those psychologists who have watched 'efficiency engineering' evolve into the much more socialized 'work simplification' of 1940 will read this chapter with keen interest.

Later chapters are concerned with learning in industry, with abnormal individuals in industry, with fatigue, monotony, and accidents, and with morale. An appendix at the end of the volume brings up for brief discussion topics which have been introduced by supervisors attending discussion groups in connection with the author's extension work.

There is perhaps no better way to summarize the contribution Walton has made than to remark that this is a book to which psychologists of various persuasions may profitably send their students for the reading of selected chapters. There are probably few industrial psychologists or social psychologists who would fail to gain genuine stimulation from a careful reading of those chapters in which Walton has thoughtfully reviewed the convictions brought home to him by his long experience in the field. In such places he writes of real men engaged in actual work who are a far cry from the oversimplified automata too frequently encountered in certain types of textbooks.

JOHN G. JENKINS.

*University of Maryland.*

SMITH, E. L. *Tides in the affairs of men: an approach to the appraisal of economic change.* New York: Macmillan, 1939. Pp. x+178.

"These Tides in the Affairs of Men, it may be found, ebb and flow more in rhythm with the habits of the beasts, birds, and fishes of our first

chapter than many would assume probable. Man is, apparently, not so greatly dissociated as he had supposed, from the source of all that enables him to live. He is a member not alone of the human race, but of that greater association which includes every form of living thing, each member of which, magnificent or microscopic, responds, it appears, in its own way to the rising and setting of the sun, to the passing of the seasons, and to those less obvious changes in the quantity and content of solar radiant activity which we are just beginning to learn how to observe and to measure."

In support of this thesis Smith, who is apparently an official in an investment house, introduces evidence from a wide variety of sources. He is chiefly interested, however, in showing that quality and amount of solar radiation are reflected in the weather and in the behavior of the stock market according to a number of cycles in which a decennial pattern is dominant. This, it will be obvious, goes beyond any mere correlation with sunspot count and involves a study of the relationship between economic trends—taken as indices of fundamental human attitudes—and conditions of solar radiation which significantly affect gross weather conditions. As a contribution to ecology, the book is properly classifiable with certain other pioneering documents in the same field rather than as a final demonstration of direct causation. It is not a volume to be lightly dismissed as the careless by-product of special pleading, but warrants a place among those volumes which point the way for further research.

JOHN G. JENKINS.

*University of Maryland.*

DURBIN, E. F. M., & BOWLBY, J. Personal aggressiveness and war. New York: Columbia Univ. Press, 1939. Pp. viii+154.

This little book was originally printed as part of a symposium entitled *Democracy and war*, edited by Durbin and G. E. G. Catlin. The material here included, however, is entirely self-contained and represents the best of the contributions to the larger volume.

The authors specifically deny that they are attempting to offer an explanation of any particular war. They are, rather, trying to offer a broad theoretical foundation which will explain the fighting, individual or group, shown by human beings. They prefer to leave to history, economics, and politics the analysis of specific wars.

For its small compass, the book does an amazingly good job of summarizing contributions from animal and child psychology, psychoanalysis, and cultural anthropology. The restrictions of space may account for omissions which are not of crucial importance: e.g. in the animal field, mention is made of Zuckermann's observations on baboons but not of controlled studies such as those of Maslow on apes and of Murchison and others on birds. Similarly, the section on psychoanalytic data deals too much with children (thereby tending to duplicate material) and not enough with adults, particularly neurotics.

The general thesis is that war is a form of fighting, and therefore, despite its exceedingly complex form, must be amenable to certain general laws of fighting behavior. This does not lead the authors to fall into

either of the two pitfalls so commonly awaiting those who essay this approach: they have not assumed that wars are inevitable because of a pugnacious instinct, destructive impulse, or "Thanatos"; nor have they ignored the fact that the occurrence of war is dependent upon the psychology of ruling groups more than on the man in the street.

The three chief mechanisms which are called upon to explain the transformation of simple fighting into complex aggressions such as war are displacement, projection, and animism. Displacement refers to the fact that hostility aroused by one person or situation may be discharged against a different and perhaps totally unrelated psychological object. The materials included in *Frustration and aggression*, by Dollard *et al.*, will, I think, help some psychologists to accept this concept. Projection is, of course, the familiar mechanism of seeing our own undesirable traits in others. Animism (in the Preface the authors propose "personalism" as a better term) is defined as the tendency to attribute misfortunes to the operation of deliberate human will.

I should sum up the general theory of war presented in the following fashion: Just in the process of living, and particularly in group living, many frustrations of strong motives will occur. The normal response to such frustration is fighting. The form of social organization (distribution of power, taboos, etc.) will determine whether this aggression can be expressed directly. Much of it (against parents, employers, government) cannot. This aggression will be displaced onto socially approved hate-objects. Because of animism, we see our troubles (economic or political, as well as personal difficulties) as resulting from the deliberate malice of some person or group (hence, the analogy with paranoia, which is not overdone); and, as a consequence of historical tradition or propaganda, this may be a foreign nation or its ruler. By projecting our own guilt-feelings and aggressive impulses onto the foreigner, we see him both as deserving no mercy and as about to attack us; hence, we are doubly justified in fighting against him.

This theoretical framework helps to explain both the decision of ruling groups to follow an aggressive policy and the willingness of the man in the street to support such a policy. Certainly, it is superior to theories blaming single "devils," such as armament makers, dictators, or militarists, for war.

I should object, however, to the cavalier fashion in which the rôle of capitalism and nationalism in causing wars is rejected. It seems to me that the formulation is entirely harmonious with the notion that these are war-producing institutions. Certainly, capitalism increases frustration both among the masses and in certain highly motivated, dynamic individuals in the ruling class. Nationalism, similarly, accentuates the tendencies toward animism, displacement, and projection which the authors consider so important.

I think this is the best published formulation of the facts of aggressiveness which are so crucial in any treatment of war. It needs documentation with concrete illustrations from specific war situations. Social scientists looking for a good psychological framework will find it very valuable, whereas psychologists not familiar with war-producing policies.

may occasionally fail to see how the ideas presented are significant and relevant. Psychologists who have been delving into institutional patterns and social conflicts, however, will find it illuminating and even exciting reading.

ROSS STAGNER.

*Dartmouth College.*

BÜHLER, C., and collaborators. *The child and his family.* (Trans. by H. Beaumont.) New York: Harper, 1939. Pp. viii+187.

The author "claims a methodological significance only" for this study. She attempts to analyze parent-child and sibling relations by reducing conversations and other activities in life situations to units of behavior. Eschewing the more academic and structural stimulus-response formulations, Bühler pragmatically conceives as behavior units, *activities* centered around *objects*, e.g. "playing with dolls." Such activities "consist of a number of events" or subdivisions of the larger unit or "core of activity." Upon this basis, the attempt is made to classify interpersonal contacts (approach and response) as to theme, means, situation, and purpose or attitude. With such a classification of "defined behavior units" the author would replace the heretofore "anecdotal" and descriptive methods with a more precise approach that lends itself to quantitative evaluation of mutual relations between individuals. According to Bühler, no one has ever undertaken this approach before, and this study is her first attempt. Only heuristic values are claimed for the actual results obtained.

Specially trained observers from the Vienna Psychological Institute visited seventeen middle-class homes at different times of day for several weeks and took part in the regular life of the families. Each family had from one to three children whose ages ranged from about three to thirteen years. Data from only eight families were used; in two families only parent-child relations were studied and in two other families only sibling relations, leaving four families in which both parent-child and sibling relations were observed.

The reliability of the data was determined by the amount of agreement between the total number of events reported by different observers and was found to range from 66 to 83% (60% was considered the permissible minimum). To determine the reliability of interpretation, incomplete records of five children (altogether, seventy-nine contacts, or about 3% of all contacts observed in the eight families) were submitted to "four or five assistants." Three contacts were not identified as such, and, of the remaining seventy-six, the following differences of interpretation are reported: (a) distinguishing between approach and response, six differences; (b) classification, three differences; (c) identifying the situation, fifteen differences; (d) identifying the intended purpose, thirty differences—a total of fifty-four differences in all. Because the above data are all that the author presents, the reader presumably is supposed "to be satisfied with an approximate reliability" and with such assurances as, "In principle . . . overtly expressed purposes can be interpreted by a

classification technique whose reliability might be insured if several workers collaborated."

Proceeding upon these assumptions of reliability, the total data for parent-child and sibling relations in all eight families are presented in descriptive and tabular form. The quantitative results of classification were found to indicate such features of these relations as the following examples. Although each parent-child relationship had its own individual characteristics, a distinct parallelism between parental and child behavior prevailed (except for affection, *e.g.* objective relations parents had with children coincided with affectionate spontaneous behavior on the part of the child). Parent-child relations were indicated as having a clearly observable influence upon sibling relations. Children's personal attitudes appeared to be expressed much more manifestly and clearly in contact with other children than in relations with adults. Although in none of the six sibling relations were both children equal partners, no evidence was found for dominance because of a child's age position in the family *per se*; rather, other factors of superiority such as ability, skills, and maturity seem to determine dominance.

The reviewer feels that this book is, at one and the same time, one of the worst and best books Bühler has produced. It is one of her worst because of its very poor and confusing organization and one of her best because of what she has attempted to do. A patient and sympathetic reader will probably find it very stimulating upon about the third reading because of the problems wrestled with. One can but wish that the author had devoted more attention to the reliability of her methodological procedures instead of stopping short with "approximations." For this reason, experimental purists may quarrel over its methodological significance even though this study is not of the armchair variety. Despite all objections—and admittedly there are many—this study deserves serious consideration as a methodological attempt to get at behavior as it develops in life situations. Those who feel that psychology is too academic and remote from actual life situations will applaud the attempt.

JERRY W. CARTER, JR.

*Indiana University.*

WALLIN, J. E. W. *Minor mental maladjustments in normal people: based on original autobiographies of personality maladjustments.* Durham, N. C.: Duke Univ. Press, 1939. Pp. vi+298.

This is "a casebook for the use of students of Mental Hygiene, Psychology, Education, Child Development, Sociology, and the Formation of Personality Traits." The 293 autobiographical reports are intended to present "a variety of factual material from the experience of capable normal individuals to illustrate different kinds of mental oddities. . ." One might question whether such "factual" material can be gathered without a thorough study of the personality as well as a critical professional check on the students' own descriptions.

The chapter on fears and phobias occupies over fifty pages; those which concern other problems (as worries, lack of self-confidence, feelings of inferiority, obsessions and compulsions, dreams, superstitions,

unwholesome attitudes, and hampering habits) average nine pages. The author defends this distribution of space and this duplication of similar problems on the basis of the prevalence of the symptoms. It appears, however, that those symptoms received disproportionate emphasis in the questionnaire which guided the respondents. Case materials are classified largely according to symptoms and situations producing them rather than in terms of inner conflicts and adjustive reactions.

Dr. Wallin has planned this volume well as a supplementary "work-book" in mental hygiene. The student is supplied with three comprehensive lists of questions which might be applied to the cases. These attempt to ascertain the causes of the problem which arise from previous experience and underlying motives and to suggest remedial and preventive measures. Brief illustrative analyses are furnished for several cases. As the introduction to each chapter there are given questions and current textbook references related to the phenomena discussed. There are practically no references to the periodical literature, should the student wish to go beyond secondary sources.

Some professional psychologists will recommend more caution regarding the use of self-analysis in a book intended for a course which introduces mental hygiene. The need is probably more imperative here, since there is no professional check on the respondents' findings. Students should be strongly impressed with the complexity of the phenomenon of personality adjustment, with the wide background necessary for valid analyses, and with their own amateur status.

As an "investigation" the author has delimited the scope of his study to a neglected group—the normal professional adult. He has supplied the student with an understanding of the phenomena investigated and a technique (questionnaire). He does not report whether he cautioned his subjects regarding the errors of self-analysis—memory, leniency, sampling, and halo. There is, however, no analysis, discussion, or summary of the results of the investigation. The reader is not supplied with tabulations, central tendencies, or dispersions on the sex, age, professional or educational status of the group, although this information is furnished with most cases. The part of the investigation dealing with sex as such is completely omitted because "it has been deemed advisable."

Teachers of mental hygiene will welcome this volume as a means of making their courses more concrete and meaningful for the normal.

FRED MCKINNEY.

*University of Missouri.*

DENNIS, W. *The Hopi child.* New York: Appleton-Century, 1940. Pp. xi+204.

This volume deals with the culture of the Hopi Indians and its effect upon the behavior of the children. Two summers were spent among the Indians, and during this time the author made good use of his opportunities for observing the behavior of the Indian children.

A breach of the peace between progressive and conservative elements

in 1906 led to the withdrawal of the latter from Oraiba, the parent township of the Third Mesa, and to the establishment of the new town of Hotavila. Still conservative, Hotavila has adhered more closely than other towns to the old Hopi culture. Thus, there was provided for the anthropologist some bases for comparison with respect to the varying influences of cultural elements on the behavior of children. Where possible, the author has presented these differences and shown their effect upon child behavior.

Through a description of their economic life, their social organization and ceremonials, the customs centering about marriage, infant and child care, we are led into an account of the behavior of the child, his games, plays, and amusements, as well as his responses to the few prohibitions imposed by society. Living in a simple material environment, the child is comparatively free of the many frustrations which encompass the child in a more complex environment, and thus he escapes the thousand and one demands made upon the American child. His taboos are linked essentially with those activities which involve danger, but at the same time he must learn certain social prohibitions with respect to stealing, lying, fighting, and the revelation of initiation secrets. In an attempt to discover the effect of the limited amount of prohibition, the author questioned informants in each village. In general, there appeared to be a remarkably small amount of "problem" behavior, as exemplified by temper tantrums, fighting, and stealing, and in each group a rapid diminution between the ages of six or seven and twelve years. The small number of frustrations is probably responsible for the infrequency of crying. It is probable that the "goodness" of the primitive child is due to the fact that he is rarely provoked into crying. At the same time, when provocation comes, it causes crying, and the cries of the primitive child resemble markedly those of the American child. The author would insist that when patterns of response are evoked—be they of fear, frustration, or vocalization—they are identical with those of the white child.

Most Hopi parents make use of the cradleboard, a wicker frame to which the child is strapped from the first day of life until he is perhaps from six to nine months old. In at least two towns, however, the parents have abandoned its use while retaining the essential native customs with respect to child care. In the comparison made of the onset of walking it was found that there was no real difference in mean time of onset between those who had and those who had not used the cradleboard.

Specific personality traits are discussed—jealousy, fear, behavior towards animals, direction of affection—while a considerable portion is devoted to individual sketches and a play diary. While appreciating the accounts of a couple of delinquent families, one could have hoped that more space had been devoted to a discussion of deviants from the cultural norm.

The data presented which bear significantly upon the problem of nature and nurture come from the experiences of a psychologist with training in anthropology. One would like to anticipate more material of the same kind. The book is written in an interesting style and is supple-

mented by a bibliography. It is a useful contribution to the nature-nurture problem.

CECIL WILLIAM MANN.

*University of Denver.*

SUPER, D. E. *Avocational interest patterns: a study in the psychology of avocations.* Stanford Univ.: Stanford Univ. Press, 1940. Pp. xiv+148.

The author raises the following questions and then attempts to answer them by means of data from a questionnaire and Strong's Vocational Interest Blank.

"1. Can avocational interests be objectively determined? Do men engaged in a given avocation have a characteristic pattern of interests, just as men in a given occupation have been shown to have?"

"2. Are the avocational interests of adolescents similar to those of adults?"

"3. How are avocations related to vocations?"

The Strong Vocational Interest Blank was chosen as an instrument because it contains a large number of items which are concerned with avocations and a still larger number which may be concerned with either avocations or vocations. With this instrument, the author attempted to discover differences among four groups of adult hobby followers, viz., stamp collectors, model engineers, instrumental musicians, and photographers. Scoring keys for these avocational interests were developed on the basis of fifty subjects in each hobby. A similar study was made of adolescents engaged in the same hobbies. The keys did not sharply differentiate between groups and were definitely inadequate for individual diagnosis.

Personal data concerning age, marital status, economic situation, vocation, satisfaction with vocational progress, regional background, etc. were collected. The results are suggestive, even if inconclusive in many respects. For example, why did the author find so many more unmarried and dissatisfied men engaged in the two artistic hobbies, music and photography, than in the other two?

In regard to his original questions, the author concludes, with some reservations, that avocational patterns do exist and can be determined, although this is not equally true for all avocations. Furthermore, the avocations of adolescents were similar to those of adults, but less clear-cut. Finally, there are both vocational and nonvocational avocations. In some instances individuals choose avocations as contributions to their vocations, and in others, as balances. The author wisely discards both the theory of balance and that of contribution as inadequate to explain his findings, and suggests, instead, an "individualized theory" whereby "avocations are chosen according to the present needs of an individual in a given situation, and on the basis of the possible ways in which that individual can meet those needs in that situation."

The above theory would seem to imply a temporary and opportunistic basis for avocations which would preclude the relative permanence that must be predicated if the interest blank is to have much significance as a

research instrument. This review is, however, hardly the place to debate the question.

The question of whether the avocational interests of adolescents are similar to those of adults can scarcely be answered with this research technique. All one can discover is whether adolescents and adults following the same hobbies show similarities of response on an interest blank. This is what the author really did.

The field of research is relatively new, and methods are still to be sought. One must admit that the author has succeeded in turning up a number of interesting leads by his methods, even if one is disposed to be critical of the instrument and the validity of some of his conclusions.

STUART M. STOKE.

Mount Holyoke College.

TOWN, C. H. *Familial feeble-mindedness: a study of one hundred and forty-one families*. Buffalo: Foster & Stewart, 1939. Pp. 97.

The reader of this volume is reminded of earlier publications such as Dugdale's *The Jukes*, in 1877, Goddard's *The Kallikak family*, in 1912, and similar publications, *The Nam family*, *Mongrel Virginians*, *The hill folk*, and others pointing out the important rôle of defective heredity in producing hundreds of unfortunate individuals requiring State surveillance which cost the citizenry of the state vast sums.

The present volume, *Familial feeble-mindedness*, was preceded by another volume (date of publication not given) by the same author, entitled *How the feeble-minded live in the community*. That volume presented a study of 136 mentally deficient persons who had been discharged from the Rome (New York) State School and replaced in the community during the period from 1905 to 1924, inclusive. The collected individual histories on those cases revealed resulting poor heredity, low socioeconomic status, social incompetence, broken homes, sexual immorality, mentally deficient and underprivileged children, all pointing to a failure on the part of those individuals in the art of living, which, in turn, reflected society's failure in meeting this social obligation understandingly. It demonstrated how miserably those individuals had to live and how easily they fell victims of all kinds of social evils.

*Familial feeble-mindedness* grew out of this background. It presents tabulated data relative to the parents, offspring, social information, and the mental diagnosis of the members of 141 families. Each of the families included among its members two or more mentally deficient persons. This includes 398 mentally deficient persons and 180 borderline, or retarded, out of a total of 1384 persons. This number represents only those who were available and diagnosed as mentally deficient and hence does not include all that would exist in the total number of 1384 persons. However, the findings point to the conclusions that these families are definite foci for mental deficiency and general social inadequacy.

In reading this short volume one inevitably becomes impressed by all the misery, crime, sickness, disease, broken homes, disappointments, unfortunate children, and hazardous births, plus all other social evils, that can thrive in a low socioeconomic status dominated by mental deficiency. It

impresses one with the current need for the mental hygiene approach in dealing with these inferiors who are struggling so inadequately to adjust normally in a highly competitive environment where sorrow and disappointment are more frequent for them than success and happiness. This study apparently used an improved scientific approach in collecting and evaluating data. However, throughout the volume, although the factor of social incompetence is emphasized, the diagnoses seem to be chiefly on the basis of IQ ratings. There are undoubtedly many individuals of low IQ rating in all communities who are well adjusted in the community and doing fairly well economically. Hence, since social incompetence is one of the chief criteria of mental deficiency, it is highly probable that Town would have found more mentally deficient subjects and also more objective data relative to the social incompetence had some objective measure of it been used.

Town concludes that, since these families are definite foci for most social evils and problems, it is important to locate them, and especially the children early in life, and provide special class training and the best training possible for them to be useful in a community, utilizing the principle of the sheltered workshop now available for the blind and the crippled.

Although this book presents little that is new to those already familiar with the problem, it does serve to remind us of the seriousness of the field of social dependency, the very prevalence of which tends to minimize its importance. It has a special timely value in relation to currently renewed interest in the nature-nurture problem.

H. ROBERT OTNESS.

*The Training School, Vineland, New Jersey.*

FLETCHER, P. *Mastering your nerves.* New York: Dutton, 1939.  
Pp. 241.

The object of this book is to give insight and therapeutic suggestions to persons who are preoccupied with conflicts and to others who are well adjusted and seek more knowledge about human nature. The author, apparently an Englishman, calls himself a "lay psychotherapist." Whereas he evinces knowledge of the dynamics of behavior and experience in "ministerial counselling," his presentation lacks systematic perspective, definitive concepts, and broad familiarity with recent psychological and psychiatric literature. His style is predominantly chatty and simple, but some explanations and suggestions are obscure, abstract, and incomplete.

The author's viewpoint is not clinical or ideographic; his bias is religious. He discusses "personalities in disorder" as though they were identical and could all be treated alike.

The book may arouse insight and "inspiration" in some counselees, but its value is limited because of the author's presentation, viewpoint, and background.

FRED MCKINNEY.

*University of Missouri.*

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## NOTES AND NEWS

A NEW department of psychology has been established in the College of Arts and Sciences at the University of Nebraska, with Dr. Arthur Jenness, associate professor of psychology, as chairman. The psychological laboratory at Nebraska has existed since 1889, but until now it has been a part of the department of philosophy and psychology.

DR. NORMAN CAMERON, formerly associate professor of psychology at Cornell University Medical College and assistant attending psychiatrist at the New York Hospital, has been appointed professor of psychology and chairman of the department of psychology at the University of Wisconsin. During the academic year 1939-1940 Dr. Cameron served as acting professor and acting chairman of the department at that university.

DR. MEREDITH P. CRAWFORD, formerly of Barnard College, has been appointed assistant professor of psychology at Vanderbilt University, Nashville, Tennessee.

THE following appointments have been made to the psychology staff of Connecticut College for the current year: Dr. Robert M. Gagne, instructor; Dr. Moritz Loewi, formerly Universität professor at the University of Breslau, research associate; and Mr. David C. McClelland, part-time assistant.

A PSYCHOLOGICAL SUPPER CLUB was organized under the direction of Dr. Saul Rosenzweig, of Worcester State Hospital and Clark University, in the Fall of 1939 for the purpose of bringing together for monthly discussions psychologists and psychiatrists interested in problems of personality and dynamic psychology.

The speakers and the papers presented during the series of sessions for 1939-1940 were as follows: Dr. Geza Roheim, "The Psychoanalytic Interpretation of Culture"; Dr. Raymond B. Cattell, "Some Psychological Consequences of Social Stratification"; Dr. Gordon W. Allport, "The Psychologist's Frame of Reference"; Dr. Raymond R. Willoughby, "Types of Deprivation Behavior in Families Under Economic Stress"; Dr. Karen Horney, "Anxiety"; Dr. Robert W. White, "Further Explorations in Personality—What Direction Should They Take?"; Dr. Nevitt Sanford, "Syndromes of Personality Variables Found in the Shady Hill Growth Study of School Children"; Dr. Kurt Lewin, "Experimental Regression and the Theory of Personality Development."

For the coming year Dr. R. R. Willoughby has been elected chairman of the group.

THE Washington-Baltimore branch of the American Psychological Association held its final meeting of the year at Goucher College, Baltimore, Maryland, on May 14. Papers were presented by: Dr. Josephine

Ball and Dr. Stacy R. Guild, Johns Hopkins School of Medicine; and Dr. Samuel A. Talbot, Wilmer Institute. Newly elected officers are as follows: President: Dr. Steuart H. Britt, George Washington University; Vice-President: Dr. Vernon P. Scheidt, Waverly Press; Secretary: Dr. Wendell W. Cruze, Wilson Teachers College; Treasurer: Mrs. Mildred St. M. Percy, District of Columbia Public Schools.

THE summer meeting of the Rocky Mountain branch of the American Psychological Association was held at Denver University on July 20 1940. It has been announced that the annual meeting will be held at the University of Wyoming, Laramie, Wyoming, on October 18 and 19, 1940.

THE Social Science Research Council announces that complete sets of *Social Science Abstracts* (1929-1932) will not be available after December 31, 1940, upon payment of express and handling charges, as heretofore. Any unsold sets remaining on their shelves will be reserved for possible library requests.

for Congress to make up for, and "to do" for, the  
country, to which they "owed" nothing, and to  
which they "owed" nothing. And of course, in  
order to do this, it will be necessary to "pay" off  
the "debt" which they "owed" to the country.

But, you say, "What is the country?" And I  
will tell you, "The country is the people, and  
the people are the country." And the people  
are the country.

So, then, we have the people, and the people  
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